Innovation in Motion

# Miba Industrial Bearings
# Fixed Profile Bearings

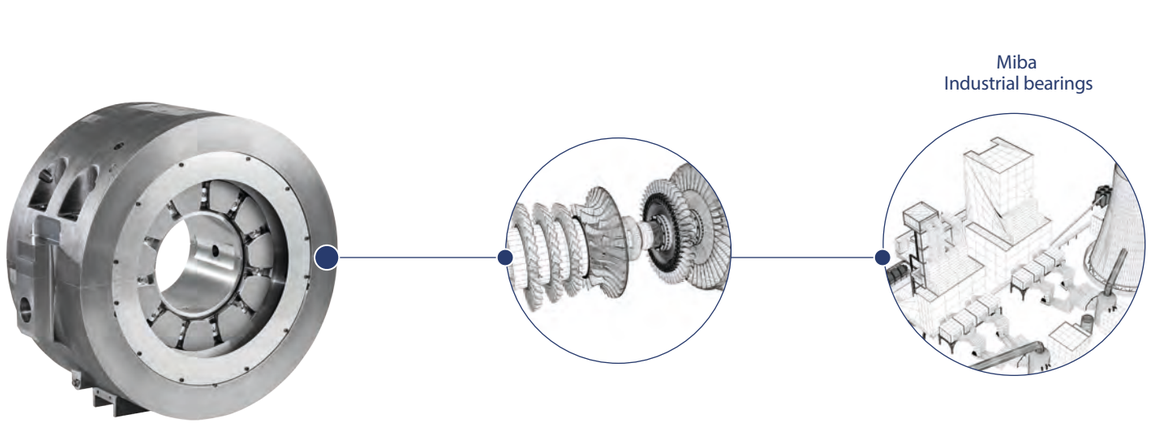
## Content

# Miba Industrial Bearings

Miba Industrial Bearings is one of the largest international hydrodynamic bearing supplier for turbomachinery. Our roots date back over 100 years when the German site first started producing bearings. Equipped with this experience we are now a center of excellence in bearing design, repair, troubleshooting and analysis as well as reversed engineering solutions.

Selecting Miba Industrial Bearings offers numerous benefits:

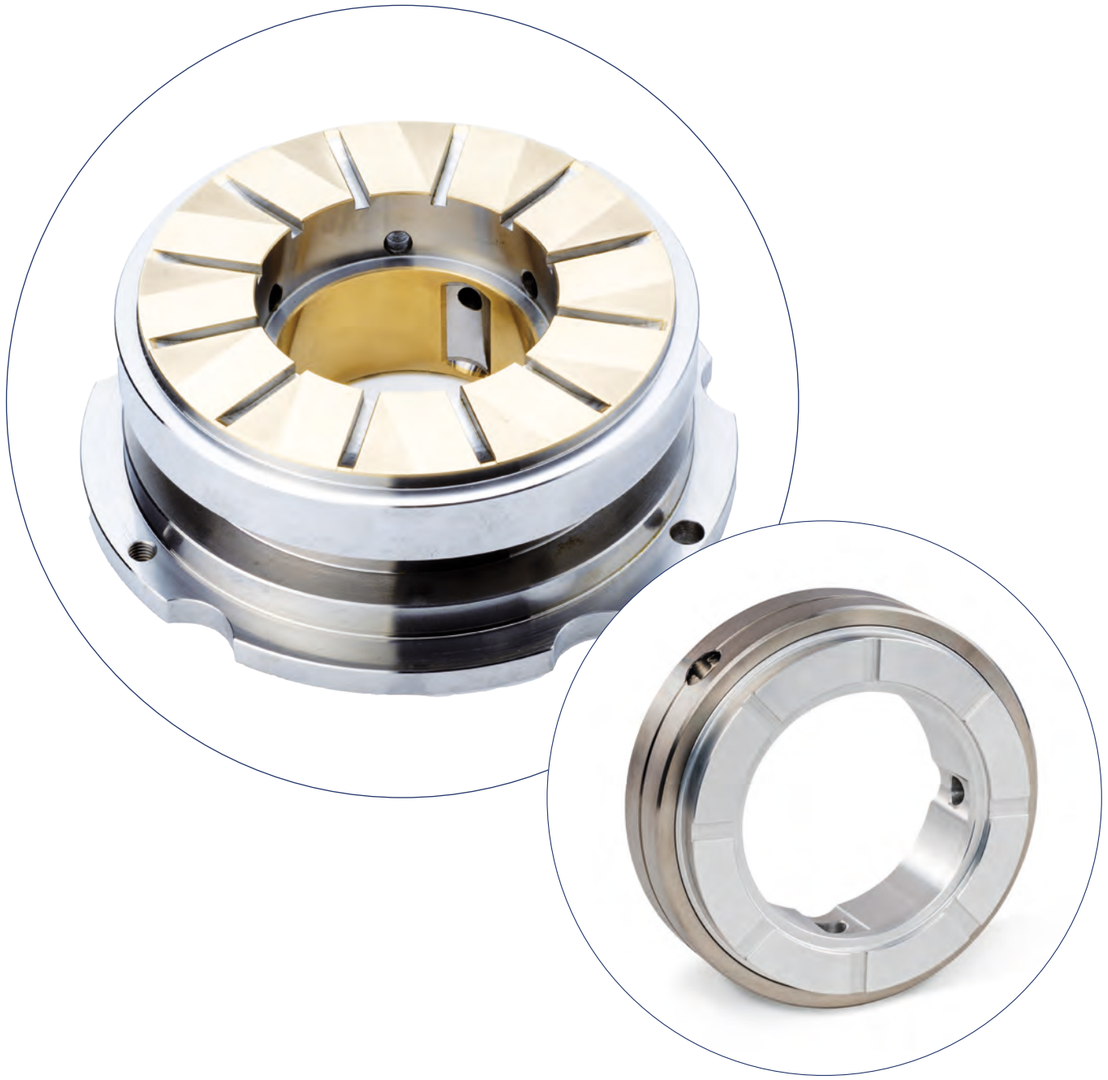
- A worldwide Miba Group with contacts in Europe, Americas and Asia is focused on customer support, competitive lead times and highest product quality
- Decades of technical experience help us to understand and satisfy the needs of our customers
- Tailored bearings for specific applications, where catalog bearings reach their limits
- Comprehensive technical support, including bearing consultation and detailed calculations
- Up-to-date calculation tools for the prediction of bearing performance and to guarantee long-term operational safety
- Miba's in-house R&D test rig capacity and external research partners, to constantly validate and improve bearing performance






# Advantages and Applications

- Installation space requirements typically lower than for tilting pad bearings
- Design is more robust than tilting pad bearings
- Often less expensive than tilting pad bearings
- Suitable for a wide range of applications due to a large selection of bore profiles

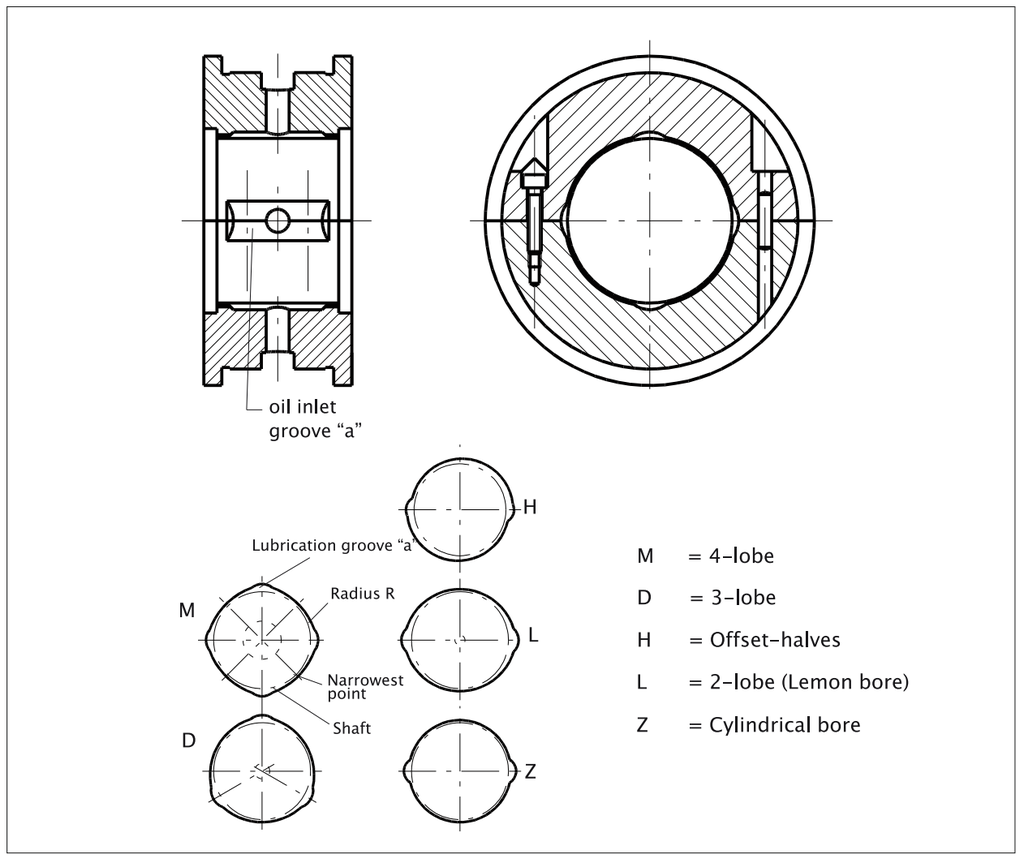


# Fixed Profile Bearings

Miba fixed profile industrial bearings are characterized by their material and manufacturing quality, thus enabling high and reliable performance.

Except for the cylindrical geometry, the bore shapes are so-called multilobe profiles, in which the bearing running surface consists of individual lobes that do not produce a cylindrical bore profile overall.

Instead, the bearing bore is profiled in such a way that a converging lubrication gap and thus hydrodynamic pressure build-up between the shaft and bearing are produced over each lobe. This is achieved by selecting the radius of the individual lobes to be larger than the nominal radius of the bearing bore, which creates the so-called preload. Compared to the cylindrical bearing, this achieves better rotor stability and allows significantly higher speeds. Each geometry has its own characteristics, so that the optimum bore profile can be selected for a wide range of applications.




Bore Geometry



# Materials

**Steel – White metal**
Various steel substrates with high quality white metal represent the most common material selection. It is the preferred material selection for a high number of rotating machinery applications operating with oil lubrication.

Solid Bronze
Solid bronze is a classical and relatively robust bearing material with a good corrosion and temperature resistance, preferably for low to medium speed applications. A hardened shaft is recommended.

Steel – Bronze
The higher temperature limit of bronze (compared to white metal) allows increased bearing temperatures for special applications. A hardened shaft is recommended (HB > 160).

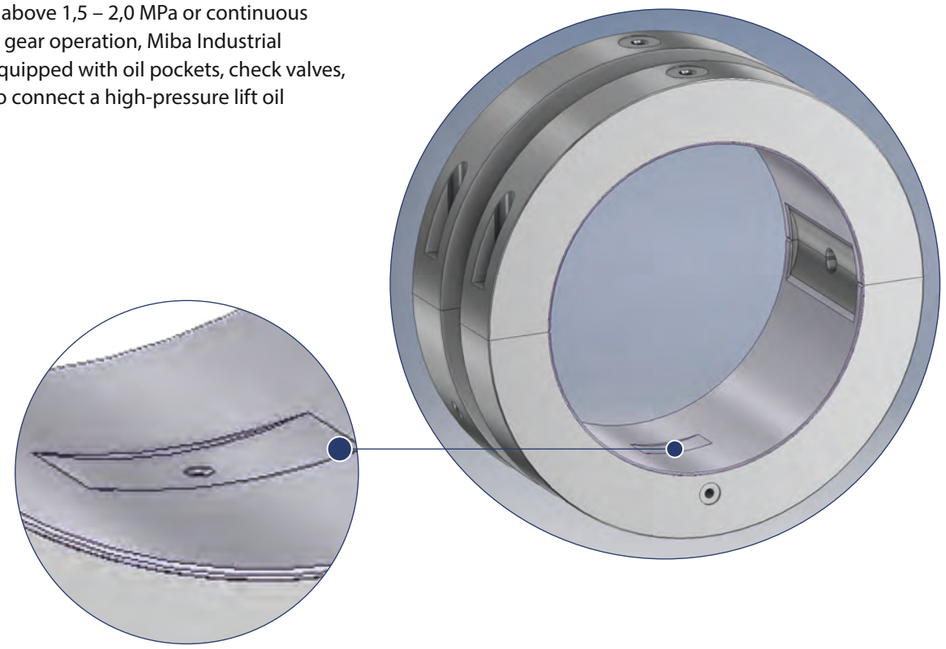
Aluminum
Aluminum is a relatively hard classical bearing material with good corrosion resistance, suitable for high temperatures. Additional wear resistance for thrust bearings can be achieved with a hard coating. Typically combined with hardened shaft and thrust collar.

Solid PEEK
PEEK offers a high wear and temperature resistance. Due to it’s chemical resistance it is a good selection for water and process media lubrication.

Steel with DLC
Used for thrust bearings for high wear resistance and suitable for highest temperatures. Combined with hardened thrust collar.

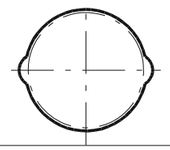
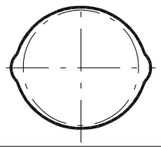
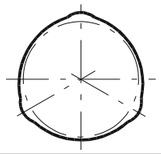
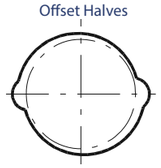
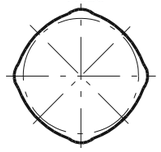
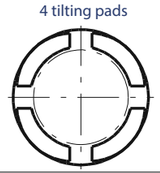
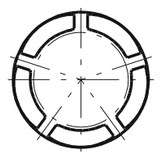
# Hydrostatic Jacking

For start-up loads above 1,5 – 2,0 MPa or continuous slow-roll / turning gear operation, Miba Industrial Bearings can be equipped with oil pockets, check valves, pipes and hoses to connect a high-pressure lift oil system.



# Bearing Bore

## Configuration Selection Table

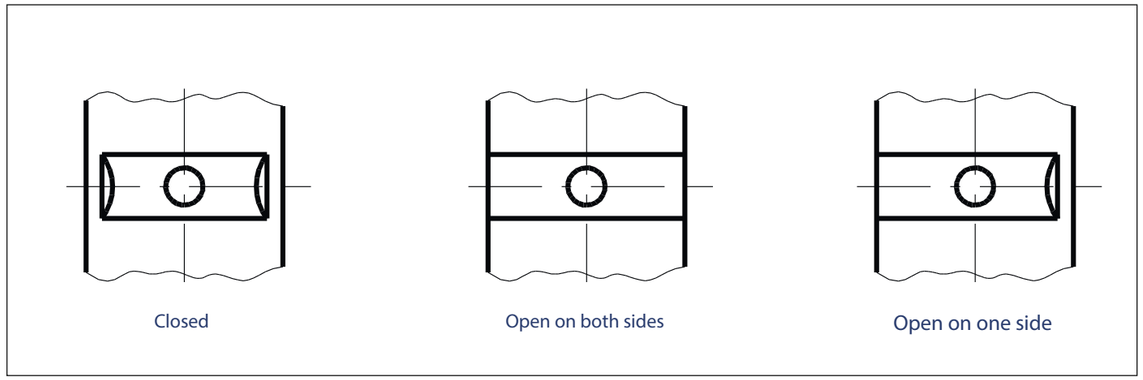
| | Peripheral Speed | Specific load | Applications |
|---|---|---|---|
| Cylindrical  | 0...30<br>(35) m/s | 0.2...4.5<br>(5) MPa | Gearboxes<br>Steam turbines<br>Electric motors<br>Generators |
| Lemon-bore  | 25...70<br>(80) m/s | 0.2...3.5<br>(4) MPa | Gearboxes<br>Steam turbines<br>Electric motors<br>Generators |
| 3 Lobe  | 30...90<br>(100) m/s | 0.1...3.0<br>(3.5) MPa | General Information:<br>Small shaft diameter<br>at high speeds<br>Turbochargers |
| Offset Halves  | 20...90<br>(100) m/s | 0.2...3.5<br>(4.0) MPa | Gearboxes<br>Steam turbines |
| 4 lobe  | 30...90<br>(100) m/s | 0.1...2.0<br>(2.5) MPa | Gearboxes<br>High-speed pumps<br>Expansion turbines<br>Refrigeration turbines<br>Machine tool spindles |
| 4 tilting pads  | 30...100<br>m/s | 0...2.5<br>(3.0) MPa | Gearboxes<br>Steam turbines<br>Single shaft compressors |
| 5 tilting pads  | 30...100<br>(120) m/s | 0...3.0<br>(3.5) MPa | Turbo gearboxes<br>Turbo compressors<br>Steam turbines<br>Gas turbines |

Values shown in parentheses represent maximum values. In individual applications and after consultation with our design and technical support team, these may be permitted.

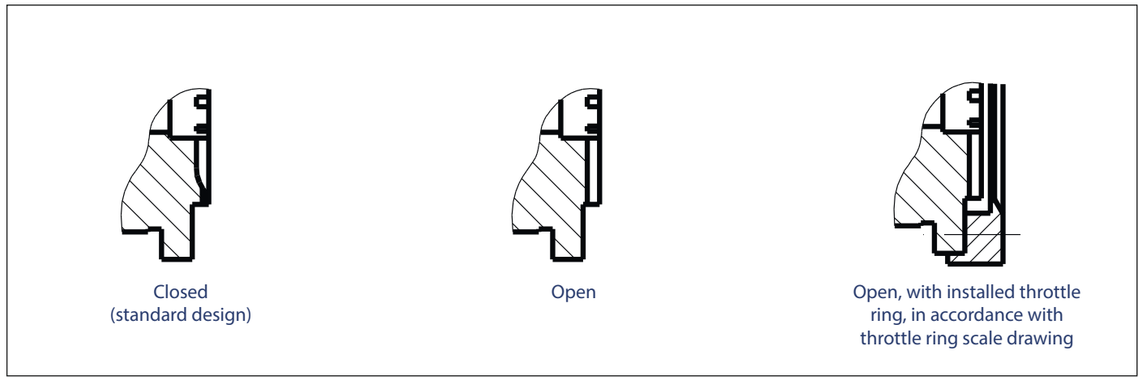


# Lubrication Grooves

Journal Bearings
By standard the lubrication pockets are laterally closed.
For particular sitatuations, the pockets can be opened on one or both sides.

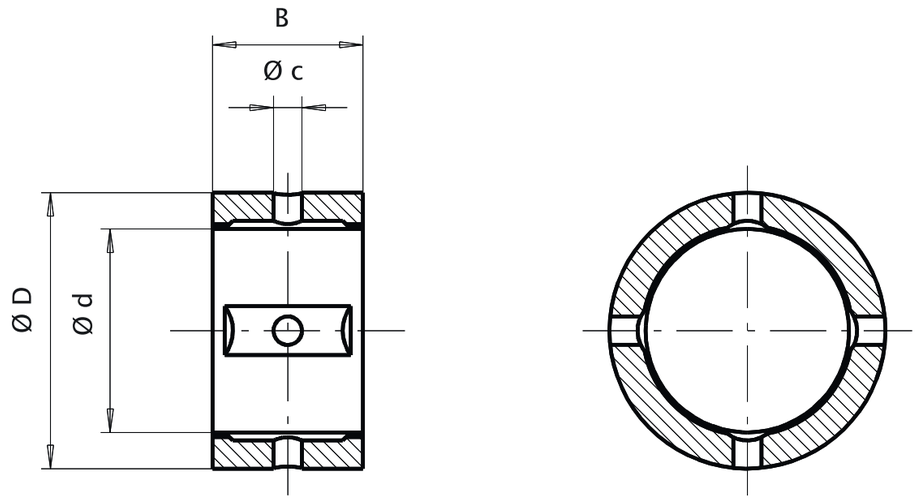



Thrust Bearings
By standard the oil grooves are radially closed. If necesarry, the grooves can be opened, also in combination with a throttle ring.



# Journal Bearing

## Thin-walled, Unsplit, B/D = 0.5




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | c |
|---|---|---|---|
| 20 | 10 | 32 | 3 |
| 25 | 12 | 38 | 3 |
| 30 | 15 | 45 | 5 |
| 35 | 18 | 50 | 5 |
| 40 | 20 | 55 | 6 |
| 45 | 22 | 62 | 6 |
| 50 | 25 | 68 | 7 |
| 55 | 28 | 72 | 7 |
| 60 | 30 | 82 | 9 |
| 65 | 32 | 90 | 9 |
| 70 | 35 | 95 | 9 |
| 75 | 38 | 105 | 9 |
| 80 | 40 | 110 | 10 |
| 85 | 42 | 115 | 10 |
| 90 | 45 | 120 | 10 |
| 95 | 48 | 125 | 10 |
| 100 | 50 | 130 | 12 |
| 110 | 55 | 140 | 12 |
| 120 | 60 | 150 | 12 |
| 130 | 65 | 170 | 12 |
| 140 | 70 | 180 | 14 |
| 150 | 75 | 190 | 14 |
| 160 | 80 | 200 | 14 |
| 170 | 85 | 220 | 14 |
| 180 | 90 | 230 | 16 |
| 190 | 95 | 240 | 16 |
| 200 | 100 | 250 | 16 |

Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

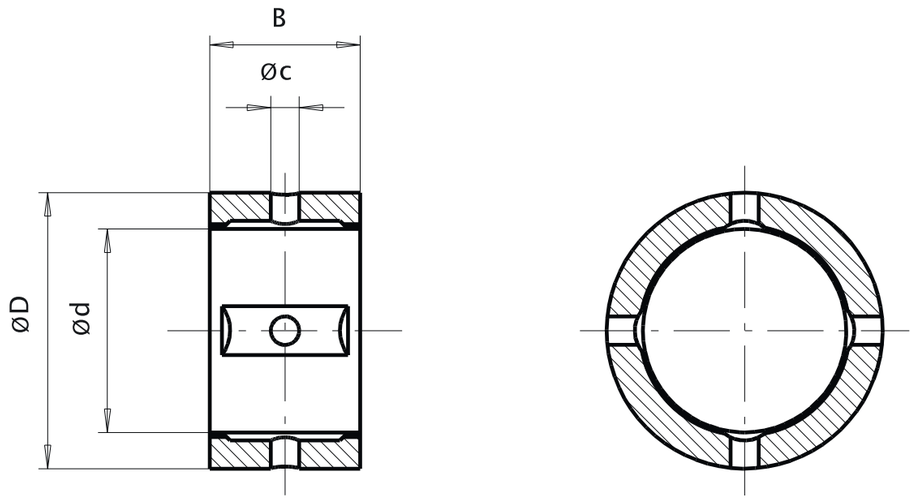
*4-Lobe d>25

Lubrication Groove:
- open on both sides
- closed
- open on one side



# Journal Bearing

## Thin-walled, Unsplit, B/D = 0.75




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | c |
|---|---|---|---|
| 17 | 12 | 29 | 3 |
| 20 | 15 | 32 | 3 |
| 25 | 19 | 38 | 3 |
| 30 | 22 | 45 | 5 |
| 35 | 26 | 50 | 5 |
| 40 | 30 | 55 | 6 |
| 45 | 34 | 62 | 6 |
| 50 | 37 | 68 | 7 |
| 55 | 41 | 72 | 7 |
| 60 | 45 | 82 | 9 |
| 65 | 49 | 90 | 9 |
| 70 | 52 | 95 | 9 |
| 75 | 56 | 105 | 9 |
| 80 | 60 | 110 | 10 |
| 85 | 64 | 115 | 10 |
| 90 | 67 | 120 | 10 |
| 95 | 71 | 125 | 10 |
| 100 | 75 | 130 | 12 |
| 110 | 82 | 140 | 12 |
| 120 | 90 | 150 | 12 |
| 130 | 97 | 170 | 12 |
| 140 | 105 | 180 | 14 |
| 150 | 112 | 190 | 14 |
| 160 | 120 | 200 | 14 |
| 170 | 127 | 220 | 14 |
| 180 | 135 | 230 | 16 |
| 190 | 142 | 240 | 16 |
| 200 | 150 | 250 | 16 |

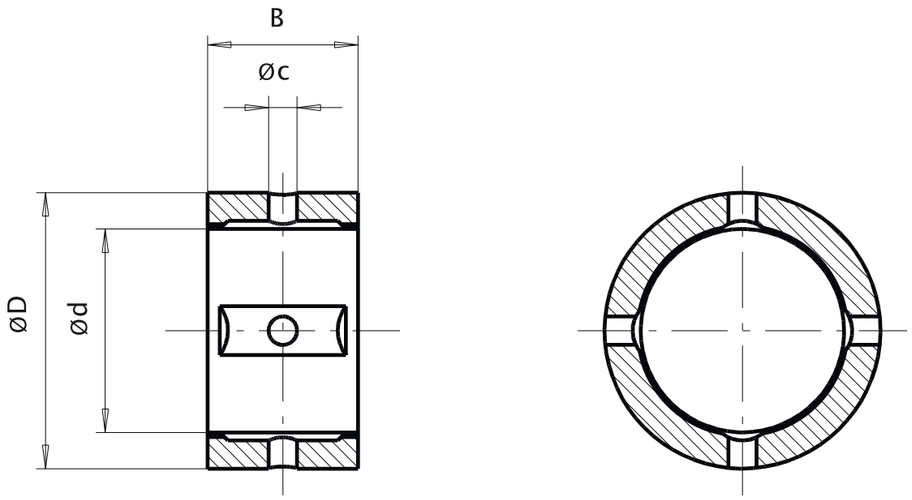
Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

*4-Lobe d>25

Lubication Groove:
- open on both sides
- closed
- open on one side

# Journal Bearing

## Thin-walled, Unsplit, B/D = 1.0




| $d^{H6}$ | B | $D_{j6}$ | c |
|---|---|---|---|
| 10 | 10 | 19 | 2 |
| 12 | 12 | 22 | 3 |
| 15 | 15 | 26 | 3 |
| 17 | 17 | 29 | 3 |
| 20 | 20 | 32 | 3 |
| 25 | 25 | 38 | 3 |
| 30 | 30 | 45 | 5 |
| 35 | 35 | 50 | 5 |
| 40 | 40 | 55 | 6 |
| 45 | 45 | 62 | 6 |
| 50 | 50 | 68 | 7 |
| 55 | 55 | 72 | 7 |
| 60 | 60 | 82 | 9 |
| 65 | 65 | 90 | 9 |
| 70 | 70 | 95 | 9 |
| 75 | 75 | 105 | 9 |
| 80 | 80 | 110 | 10 |
| 85 | 85 | 115 | 10 |
| 90 | 90 | 120 | 10 |
| 95 | 95 | 125 | 10 |
| 100 | 100 | 130 | 12 |
| 110 | 110 | 140 | 12 |
| 120 | 120 | 150 | 12 |
| 130 | 130 | 170 | 12 |
| 140 | 140 | 180 | 14 |
| 150 | 150 | 190 | 14 |
| 160 | 160 | 200 | 14 |
| 170 | 170 | 220 | 14 |
| 180 | 180 | 230 | 16 |
| 190 | 190 | 240 | 16 |
| 200 | 200 | 250 | 16 |

Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

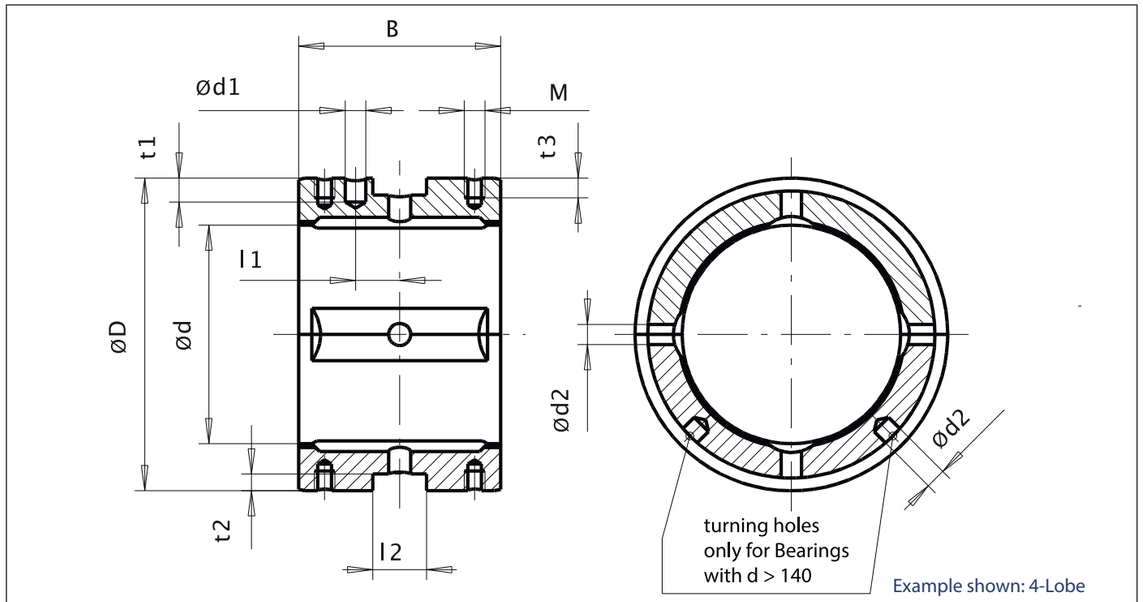
*4-Lobe d>25

Lubrication Groove:
- open on both sides
- closed
- open on one side



# Journal Bearing

## Split, Following DIN 7474, B/D = 0.75, E-131




| $d^{H6}$ | D | B | d1 | d2 | M | l1 | l2 | t1 | t2 | t3 |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 40 m6 | 20 | 2 | 2,5 | - | 4,0 | 5 | 2 | 3 | - |
| 28 | 44 m6 | 22 | 2 | 2,5 | - | 5,0 | 6 | 2 | 3 | - |
| 32 | 48 m6 | 25 | 2 | 3,0 | - | 5,0 | 6 | 2 | 3 | - |
| 36 | 52 m6 | 28 | 3 | 3,0 | - | 6,0 | 7 | 3 | 3 | - |
| 40 | 56 m6 | 32 | 3 | 3,5 | - | 6,0 | 8 | 3 | 3 | - |
| 45 | 60 m6 | 35 | 3 | 3,5 | - | 8,5 | 9 | 3 | 3 | - |
| 50 | 65 m6 | 35 | 4 | 4,0 | - | 9,5 | 10 | 3 | 3 | - |
| 56 | 70 m6 | 40 | 4 | 5,0 | - | 10,0 | 10 | 3 | 3 | - |
| 63 | 80 m6 | 45 | 4 | 5,0 | - | 12,5 | 12 | 4 | 3 | - |
| 70 | 90 m6 | 50 | 5 | 6,0 | - | 13,0 | 12 | 4 | 3 | - |
| 80 | 105 m6 | 60 | 5 | 6,0 | - | 15,0 | 15 | 5 | 4 | - |
| 90 | 115 m6 | 65 | 6 | 8,0 | - | 17,5 | 15 | 5 | 4 | - |
| 100 | 130 m6 | 75 | 7 | 8,0 | - | 17,5 | 15 | 6 | 4 | - |
| 110 | 140 k6 | 80 | 7 | 10,0 | - | 20,0 | 20 | 6 | 5 | - |
| 125 | 160 k6 | 95 | 9 | 10,0 | - | 27,5 | 20 | 8 | 5 | - |
| 140 | 180 k6 | 105 | 9 | 12,0 | - | 27,5 | 20 | 8 | 5 | - |
| 160 | 205 k6 | 120 | 11 | 12,0 | 8 | 28,0 | 25 | 10 | 6 | 15 |
| 180 | 230 k6 | 135 | 11 | 14,0 | 8 | 35,5 | 25 | 15 | 6 | 15 |
| 200 | 260 k6 | 150 | 13 | 14,0 | 8 | 35,0 | 25 | 15 | 6 | 15 |
| 225 | 290 k6 | 170 | 13 | 16,0 | 10 | 45,0 | 32 | 15 | 8 | 20 |
| 250 | 325 k6 | 190 | 15 | 16,0 | 10 | 45,0 | 32 | 18 | 8 | 20 |
| 280 | 360 j6 | 210 | 15 | 18,0 | 10 | 45,0 | 32 | 20 | 8 | 20 |
| 315 | 410 j6 | 235 | 18 | 18,0 | 12 | 57,5 | 40 | 20 | 10 | 23 |
| 355 | 460 j6 | 265 | 18 | 20,0 | 16 | 62,5 | 40 | 20 | 10 | 30 |
| 400 | 515js6 | 300 | 22 | 20,0 | 20 | 65,0 | 40 | 22 | 10 | 30 |
| 450 | 580js6 | 340 | 27 | 25,0 | 25 | 60,0 | 50 | 27 | 13 | 33 |
| 500 | 645js6 | 375 | 32 | 25,0 | 25 | 77,5 | 50 | 32 | 13 | 33 |

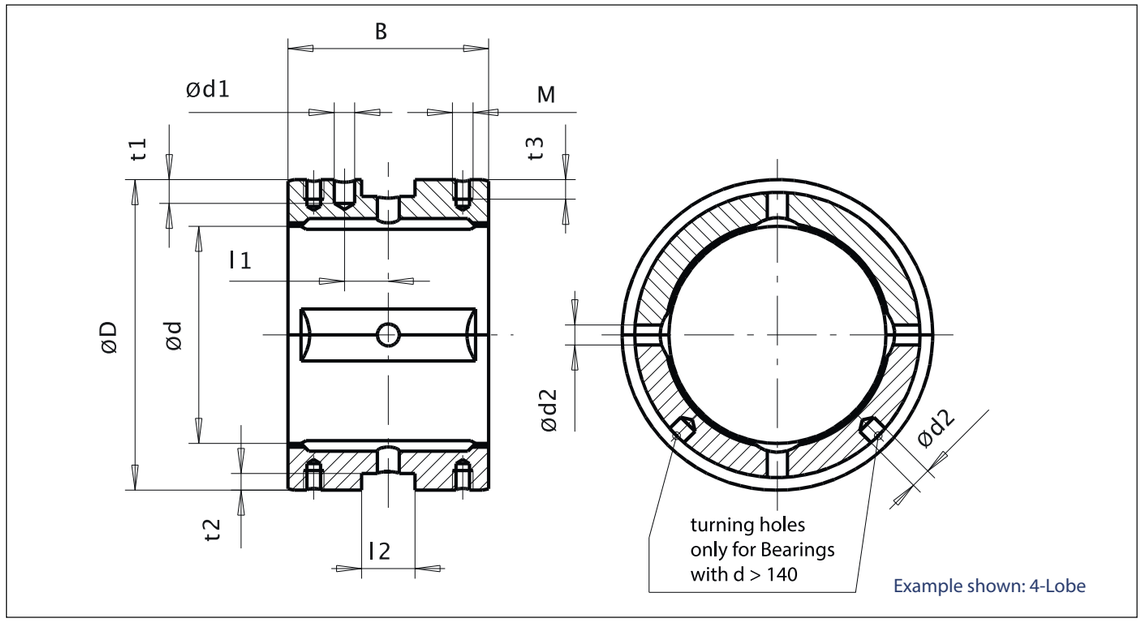
Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

*4-Lobe d>25

Lubrication Groove:
- open on both sides
- closed
- open on one side

# Journal Bearing

## Split, Following DIN 7474, B/D = 1, E-131




| $d^{H6}$ | D | B | d1 | d2 | d5 | M | l1 | l2 | t1 | t2 | t3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 105 m6 | 80 | 4 | 9 | 8 | - | 20 | 20,0 | 5 | 4,0 | - |
| 90 | 115 m6 | 90 | 5 | 10 | 8 | - | 23 | 25,0 | 5 | 4,0 | - |
| 100 | 130 m6 | 100 | 6 | 12 | 12 | - | 23 | 25,0 | 6 | 5,0 | - |
| 110 | 140 k6 | 110 | 6 | 14 | 12 | - | 25 | 27,5 | 6 | 6,0 | - |
| 125 | 160 k6 | 125 | 8 | 16 | 12 | - | 25 | 31,0 | 8 | 6,0 | - |
| 140 | 180 k6 | 140 | 8 | 18 | 18 | - | 30 | 35,0 | 8 | 6,5 | - |
| 160 | 205 k6 | 160 | 10 | 20 | 18 | 8 | 35 | 38,0 | 10 | 7,5 | 15 |
| 180 | 230 k6 | 180 | 10 | 22 | 18 | 8 | 35 | 40,0 | 15 | 9,0 | 15 |
| 200 | 260 k6 | 200 | 12 | 24 | 24 | 8 | 40 | 40,0 | 15 | 10,0 | 15 |
| 225 | 290 k6 | 225 | 12 | 26 | 24 | 10 | 40 | 45,0 | 15 | 11,5 | 20 |
| 250 | 325 k6 | 250 | 14 | 28 | 24 | 10 | 45 | 50,0 | 18 | 12,0 | 20 |
| 280 | 360 j6 | 280 | 14 | 30 | 30 | 10 | 50 | 60,0 | 20 | 13,0 | 20 |
| 315 | 410 j6 | 315 | 16 | 35 | 30 | 12 | 55 | 65,0 | 20 | 14,0 | 23 |
| 355 | 460 j6 | 355 | 16 | 38 | 30 | 16 | 60 | 70,0 | 20 | 16,5 | 30 |
| 400 | 515 js6 | 400 | 20 | 42 | 40 | 16 | 65 | 70,0 | 25 | 20,5 | 30 |
| 450 | 580 js6 | 450 | 25 | 48 | 40 | 20 | 70 | 75,0 | 30 | 24,0 | 33 |
| 500 | 645 js6 | 500 | 30 | 52 | 40 | 20 | 75 | 80,0 | 30 | 26,0 | 33 |

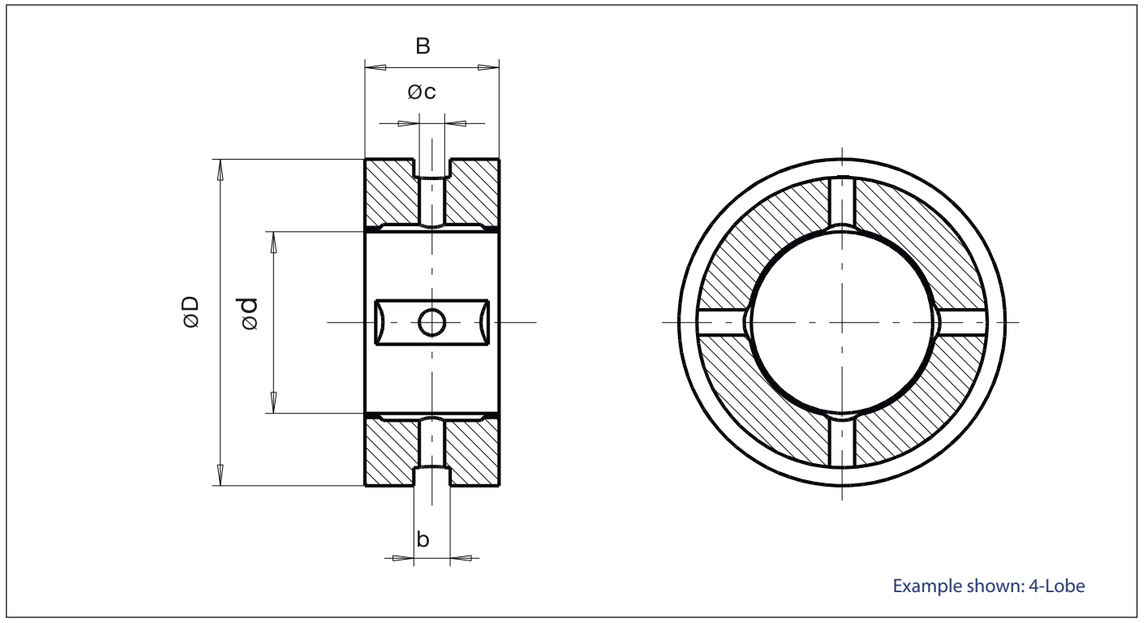
Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

Lubrication Groove:
- open on both sides
- closed
- open on one side



# Journal Bearing

## Unsplit, B/D = 0.5




| $d^{H6}$ | B | $D_{j6}$ | b | c |
|---|---|---|---|---|
| 20 | 10 | 47 | 4 | 3 |
| 25 | 12 | 52 | 5 | 3 |
| 30 | 15 | 62 | 6 | 5 |
| 35 | 18 | 72 | 8 | 5 |
| 40 | 20 | 80 | 8 | 6 |
| 45 | 22 | 85 | 8 | 6 |
| 50 | 25 | 90 | 10 | 7 |
| 55 | 28 | 95 | 10 | 7 |
| 60 | 30 | 100 | 10 | 9 |
| 65 | 32 | 105 | 12 | 9 |
| 70 | 35 | 110 | 12 | 9 |
| 75 | 38 | 120 | 12 | 9 |
| 80 | 40 | 125 | 14 | 10 |
| 85 | 42 | 130 | 14 | 10 |
| 90 | 45 | 135 | 14 | 10 |
| 95 | 48 | 140 | 16 | 10 |
| 100 | 50 | 150 | 16 | 12 |
| 110 | 55 | 160 | 16 | 12 |
| 120 | 60 | 170 | 16 | 12 |
| 130 | 65 | 180 | 16 | 12 |
| 140 | 70 | 200 | 16 | 14 |
| 150 | 75 | 210 | 20 | 14 |
| 160 | 80 | 220 | 20 | 14 |
| 170 | 85 | 240 | 20 | 14 |
| 180 | 90 | 250 | 20 | 16 |
| 190 | 95 | 260 | 20 | 16 |
| 200 | 100 | 270 | 20 | 16 |

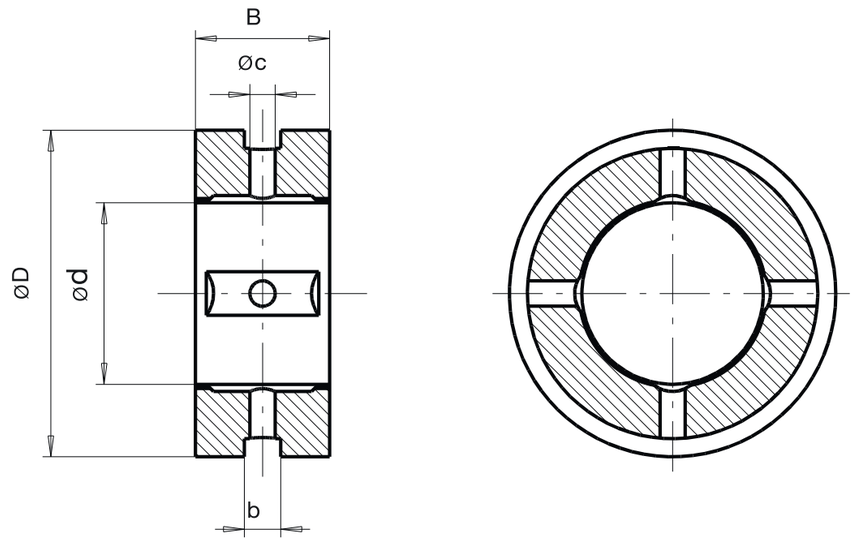
Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

*4-Lobe d>25

Lubrication Groove:
- open on both sides
- closed
- open on one side

# Journal Bearing

## Unsplit, B/D = 0.75




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | b | c |
|---|---|---|---|---|
| 17 | 12 | 40 | 4 | 3 |
| 20 | 15 | 47 | 4 | 3 |
| 25 | 19 | 52 | 5 | 3 |
| 30 | 22 | 62 | 6 | 5 |
| 35 | 26 | 72 | 8 | 5 |
| 40 | 30 | 80 | 8 | 6 |
| 45 | 34 | 85 | 8 | 6 |
| 50 | 37 | 90 | 10 | 7 |
| 55 | 41 | 95 | 10 | 7 |
| 60 | 45 | 100 | 10 | 9 |
| 65 | 49 | 105 | 12 | 9 |
| 70 | 52 | 110 | 12 | 9 |
| 75 | 56 | 120 | 12 | 9 |
| 80 | 60 | 125 | 14 | 10 |
| 85 | 64 | 130 | 14 | 10 |
| 90 | 67 | 135 | 14 | 10 |
| 95 | 71 | 140 | 16 | 10 |
| 100 | 75 | 150 | 16 | 12 |
| 110 | 82 | 160 | 16 | 12 |
| 120 | 90 | 170 | 16 | 12 |
| 130 | 97 | 180 | 16 | 12 |
| 140 | 105 | 200 | 16 | 14 |
| 150 | 112 | 210 | 20 | 14 |
| 160 | 120 | 220 | 20 | 14 |
| 170 | 127 | 240 | 20 | 14 |
| 180 | 135 | 250 | 20 | 16 |
| 190 | 142 | 260 | 20 | 16 |
| 200 | 150 | 270 | 20 | 16 |

Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

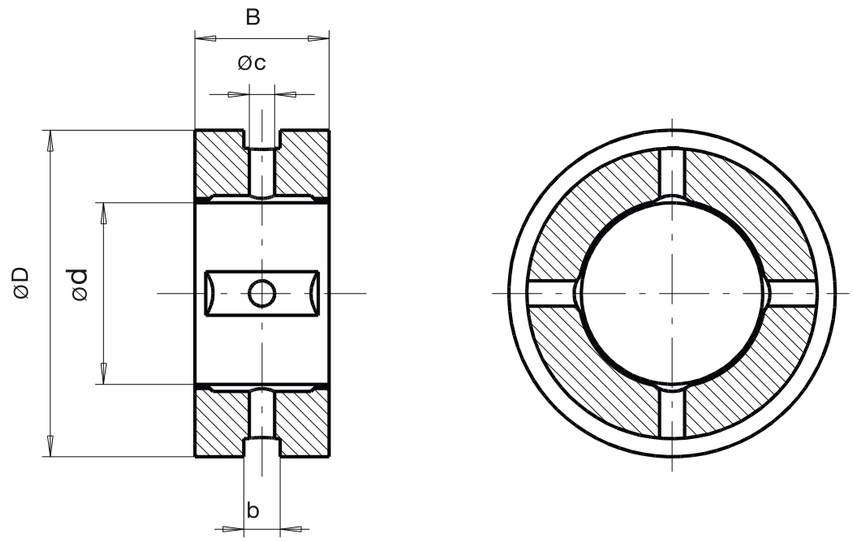
*4-Lobe d>25

Lubrication Groove:
- open on both sides
- closed
- open on one side



# Journal Bearing

## Unsplit, B/D = 1.0




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | b | c |
|---|---|---|---|---|
| 10 | 10 | 30 | 3 | 2 |
| 12 | 12 | 32 | 4 | 3 |
| 15 | 15 | 35 | 4 | 3 |
| 17 | 17 | 40 | 4 | 3 |
| 20 | 20 | 47 | 4 | 3 |
| 25 | 25 | 52 | 7 | 3 |
| 30 | 30 | 62 | 8 | 5 |
| 35 | 35 | 72 | 10 | 5 |
| 40 | 40 | 80 | 10 | 6 |
| 45 | 45 | 85 | 10 | 6 |
| 50 | 50 | 90 | 12 | 7 |
| 55 | 55 | 95 | 12 | 7 |
| 60 | 60 | 100 | 12 | 9 |
| 65 | 65 | 105 | 15 | 9 |
| 70 | 70 | 110 | 15 | 9 |
| 75 | 75 | 120 | 15 | 9 |
| 80 | 80 | 125 | 18 | 10 |
| 85 | 85 | 130 | 18 | 10 |
| 90 | 90 | 135 | 18 | 10 |
| 95 | 95 | 140 | 21 | 10 |
| 100 | 100 | 150 | 21 | 12 |
| 110 | 110 | 160 | 21 | 12 |
| 120 | 120 | 170 | 21 | 12 |
| 130 | 130 | 180 | 21 | 12 |
| 140 | 140 | 200 | 21 | 14 |
| 150 | 150 | 210 | 25 | 14 |
| 160 | 160 | 220 | 25 | 14 |
| 170 | 170 | 240 | 25 | 14 |
| 180 | 180 | 250 | 25 | 16 |
| 190 | 190 | 260 | 25 | 16 |
| 200 | 200 | 270 | 25 | 16 |

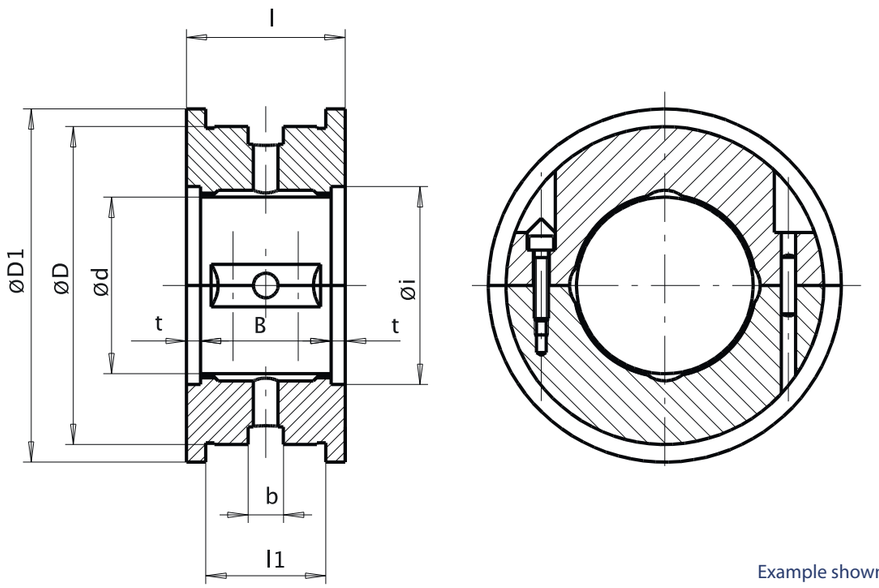
Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

*4-Lobe d>25

Lubrication Groove:
- open on both sides
- closed
- open on one side

# Journal Bearing

## Split, B/D = 0.5




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | $l1^{H7}$ | b | t | i |
|---|---|---|---|---|---|---|---|---|
| 55 | 28 | 95 | 105 | 38 | 27 | 8 | 5 | 61 |
| 60 | 30 | 100 | 110 | 40 | 28 | 8 | 5 | 66 |
| 65 | 32 | 105 | 115 | 42 | 29 | 9 | 5 | 71 |
| 70 | 35 | 110 | 120 | 45 | 31 | 10 | 5 | 76 |
| 75 | 38 | 120 | 130 | 48 | 32 | 10 | 5 | 81 |
| 80 | 40 | 125 | 135 | 50 | 34 | 12 | 5 | 86 |
| 85 | 42 | 130 | 140 | 52 | 35 | 12 | 5 | 91 |
| 90 | 45 | 135 | 145 | 55 | 35 | 12 | 5 | 96 |
| 95 | 48 | 140 | 150 | 58 | 36 | 13 | 5 | 101 |
| 100 | 50 | 150 | 160 | 62 | 38 | 13 | 6 | 106 |
| 110 | 55 | 160 | 175 | 67 | 41 | 14 | 6 | 116 |
| 120 | 60 | 170 | 185 | 72 | 44 | 15 | 6 | 126 |
| 130 | 65 | 180 | 195 | 77 | 47 | 15 | 6 | 136 |
| 140 | 70 | 200 | 215 | 82 | 50 | 15 | 6 | 146 |
| 150 | 75 | 210 | 225 | 87 | 53 | 18 | 6 | 156 |
| 160 | 80 | 220 | 235 | 92 | 56 | 18 | 6 | 166 |
| 170 | 85 | 240 | 255 | 97 | 59 | 18 | 6 | 176 |
| 180 | 90 | 250 | 265 | 102 | 62 | 18 | 6 | 186 |
| 190 | 95 | 260 | 275 | 107 | 65 | 18 | 6 | 196 |
| 200 | 100 | 270 | 285 | 112 | 68 | 18 | 6 | 206 |
| 210 | 105 | 280 | 300 | 115 | 70 | 18 | 5 | 218 |
| 220 | 110 | 290 | 310 | 120 | 75 | 20 | 5 | 228 |
| 230 | 115 | 300 | 320 | 125 | 80 | 20 | 5 | 238 |
| 240 | 120 | 310 | 330 | 130 | 85 | 20 | 5 | 248 |
| 250 | 125 | 330 | 350 | 135 | 90 | 22 | 5 | 258 |
| 260 | 130 | 340 | 360 | 140 | 95 | 22 | 5 | 268 |
| 270 | 135 | 350 | 370 | 145 | 95 | 22 | 5 | 278 |
| 280 | 140 | 360 | 380 | 150 | 100 | 22 | 5 | 288 |
| 290 | 145 | 370 | 390 | 155 | 105 | 25 | 5 | 298 |
| 300 | 150 | 390 | 410 | 160 | 110 | 25 | 5 | 308 |

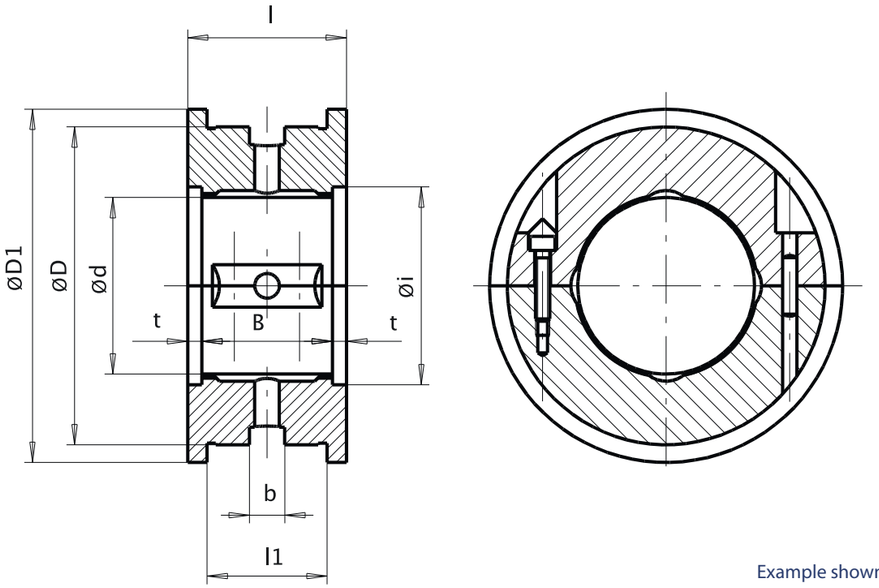
Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

Lubrication Groove:
- open on both sides
- closed
- open on one side



# Journal Bearing

## Split, B/D = 0.75




Example shown: 4-Lobe

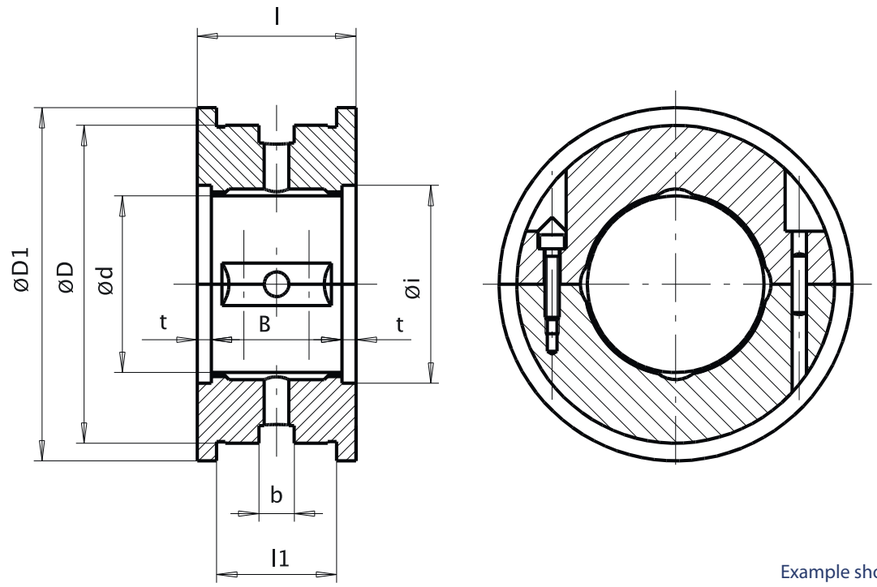
| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | $l1^{H7}$ | b | t | i |
|---|---|---|---|---|---|---|---|---|
| 40 | 30 | 80 | 90 | 38 | 27 | 8 | 4 | 44 |
| 45 | 34 | 85 | 95 | 42 | 31 | 10 | 4 | 49 |
| 50 | 37 | 90 | 100 | 45 | 34 | 10 | 4 | 49 |
| 55 | 41 | 95 | 105 | 49 | 38 | 12 | 4 | 61 |
| 60 | 45 | 100 | 110 | 53 | 41 | 12 | 4 | 66 |
| 65 | 49 | 105 | 115 | 57 | 44 | 12 | 4 | 71 |
| 70 | 52 | 110 | 120 | 60 | 46 | 12 | 4 | 76 |
| 75 | 56 | 120 | 130 | 64 | 48 | 12 | 4 | 81 |
| 80 | 60 | 125 | 135 | 68 | 52 | 18 | 4 | 86 |
| 85 | 64 | 130 | 140 | 72 | 55 | 18 | 4 | 91 |
| 90 | 67 | 135 | 145 | 75 | 55 | 18 | 4 | 96 |
| 95 | 71 | 140 | 150 | 79 | 57 | 21 | 4 | 101 |
| 100 | 75 | 150 | 160 | 83 | 59 | 21 | 4 | 106 |
| 110 | 82 | 160 | 175 | 90 | 64 | 21 | 4 | 116 |
| 120 | 90 | 170 | 185 | 98 | 70 | 21 | 4 | 126 |
| 130 | 97 | 180 | 195 | 105 | 75 | 21 | 4 | 136 |
| 140 | 105 | 200 | 215 | 113 | 81 | 21 | 4 | 146 |
| 150 | 112 | 210 | 225 | 120 | 86 | 25 | 4 | 156 |
| 160 | 120 | 220 | 235 | 128 | 92 | 25 | 4 | 166 |
| 170 | 127 | 240 | 255 | 135 | 97 | 25 | 4 | 176 |
| 180 | 135 | 250 | 265 | 143 | 103 | 25 | 4 | 186 |
| 190 | 142 | 260 | 275 | 150 | 108 | 25 | 4 | 196 |
| 200 | 150 | 270 | 285 | 158 | 114 | 25 | 4 | 206 |
| 210 | 157 | 280 | 300 | 167 | 120 | 25 | 5 | 218 |
| 220 | 165 | 290 | 310 | 175 | 125 | 25 | 5 | 228 |
| 230 | 172 | 300 | 320 | 182 | 130 | 25 | 5 | 238 |
| 240 | 180 | 310 | 330 | 190 | 135 | 25 | 5 | 248 |
| 250 | 187 | 330 | 350 | 197 | 150 | 30 | 5 | 258 |
| 260 | 195 | 340 | 360 | 205 | 155 | 30 | 5 | 268 |
| 270 | 202 | 350 | 370 | 212 | 155 | 30 | 5 | 278 |
| 280 | 210 | 360 | 380 | 220 | 160 | 30 | 5 | 288 |
| 290 | 217 | 370 | 390 | 227 | 170 | 35 | 5 | 298 |
| 300 | 225 | 390 | 410 | 235 | 175 | 35 | 5 | 308 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

Lubrication Groove:
- open on both sides
- closed
- open on one side

# Journal Bearing

## Split, B/D = 1.0




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | $l1^{H7}$ | b | t | i |
|---|---|---|---|---|---|---|---|---|
| 30 | 30 | 62 | 72 | 36 | 26 | 7 | 3 | 34 |
| 35 | 35 | 72 | 82 | 41 | 30 | 7 | 3 | 39 |
| 40 | 40 | 80 | 90 | 46 | 35 | 8 | 3 | 44 |
| 45 | 45 | 85 | 95 | 51 | 40 | 10 | 3 | 49 |
| 50 | 50 | 90 | 100 | 56 | 45 | 10 | 3 | 56 |
| 55 | 55 | 95 | 105 | 61 | 50 | 12 | 3 | 61 |
| 60 | 65 | 100 | 110 | 66 | 54 | 12 | 3 | 66 |
| 65 | 65 | 105 | 115 | 71 | 58 | 12 | 3 | 71 |
| 70 | 70 | 110 | 120 | 76 | 62 | 12 | 3 | 76 |
| 75 | 75 | 120 | 130 | 81 | 65 | 12 | 3 | 81 |
| 80 | 80 | 125 | 135 | 86 | 70 | 18 | 3 | 86 |
| 85 | 85 | 130 | 140 | 91 | 74 | 18 | 3 | 91 |
| 90 | 90 | 135 | 145 | 96 | 76 | 18 | 3 | 96 |
| 95 | 95 | 140 | 150 | 101 | 79 | 21 | 3 | 101 |
| 100 | 100 | 150 | 160 | 106 | 82 | 21 | 3 | 106 |
| 110 | 110 | 160 | 175 | 116 | 90 | 21 | 3 | 116 |
| 120 | 120 | 170 | 185 | 126 | 98 | 21 | 3 | 126 |
| 130 | 130 | 180 | 195 | 136 | 106 | 21 | 3 | 136 |
| 140 | 140 | 200 | 215 | 146 | 114 | 21 | 3 | 146 |
| 150 | 150 | 210 | 225 | 156 | 122 | 25 | 3 | 156 |
| 160 | 160 | 220 | 235 | 166 | 130 | 25 | 3 | 166 |
| 170 | 170 | 240 | 255 | 176 | 138 | 25 | 3 | 176 |
| 180 | 180 | 250 | 265 | 186 | 146 | 25 | 3 | 186 |
| 190 | 190 | 260 | 275 | 196 | 154 | 25 | 3 | 196 |
| 200 | 200 | 270 | 285 | 206 | 162 | 25 | 3 | 206 |
| 210 | 210 | 280 | 300 | 220 | 160 | 25 | 5 | 218 |
| 220 | 220 | 290 | 310 | 230 | 170 | 25 | 5 | 228 |
| 230 | 230 | 300 | 320 | 240 | 180 | 25 | 5 | 238 |
| 240 | 240 | 310 | 330 | 250 | 190 | 25 | 5 | 248 |
| 250 | 250 | 330 | 350 | 260 | 200 | 30 | 5 | 258 |
| 260 | 260 | 340 | 360 | 270 | 210 | 30 | 5 | 268 |
| 270 | 270 | 350 | 370 | 280 | 210 | 30 | 5 | 278 |
| 280 | 280 | 360 | 380 | 290 | 210 | 30 | 5 | 288 |
| 290 | 290 | 370 | 390 | 300 | 220 | 35 | 5 | 298 |
| 300 | 300 | 390 | 410 | 310 | 230 | 35 | 5 | 308 |

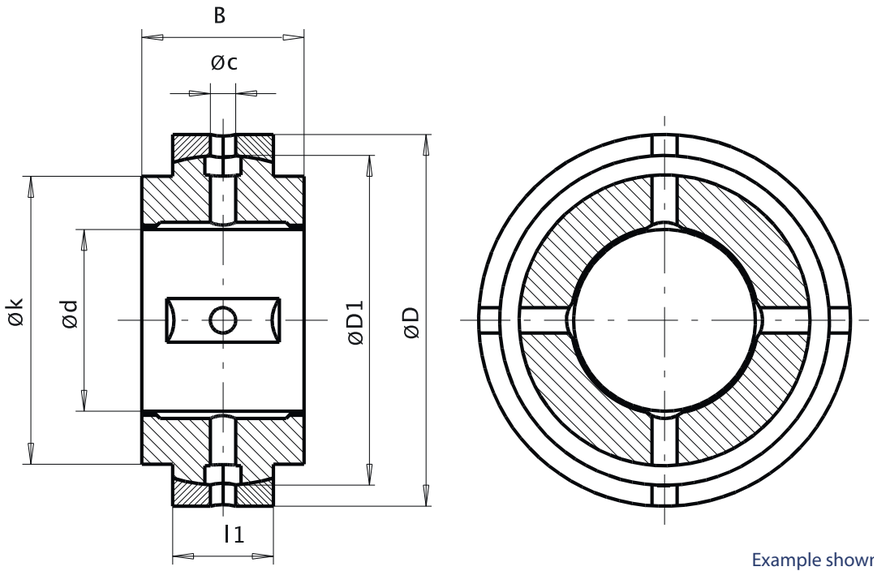
Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

Lubrication Groove:
- open on both sides
- closed
- open on one side



# Journal Bearing

## Spherical Seat, Unsplit, B/D = 1.0




Example shown: 4-Lobe

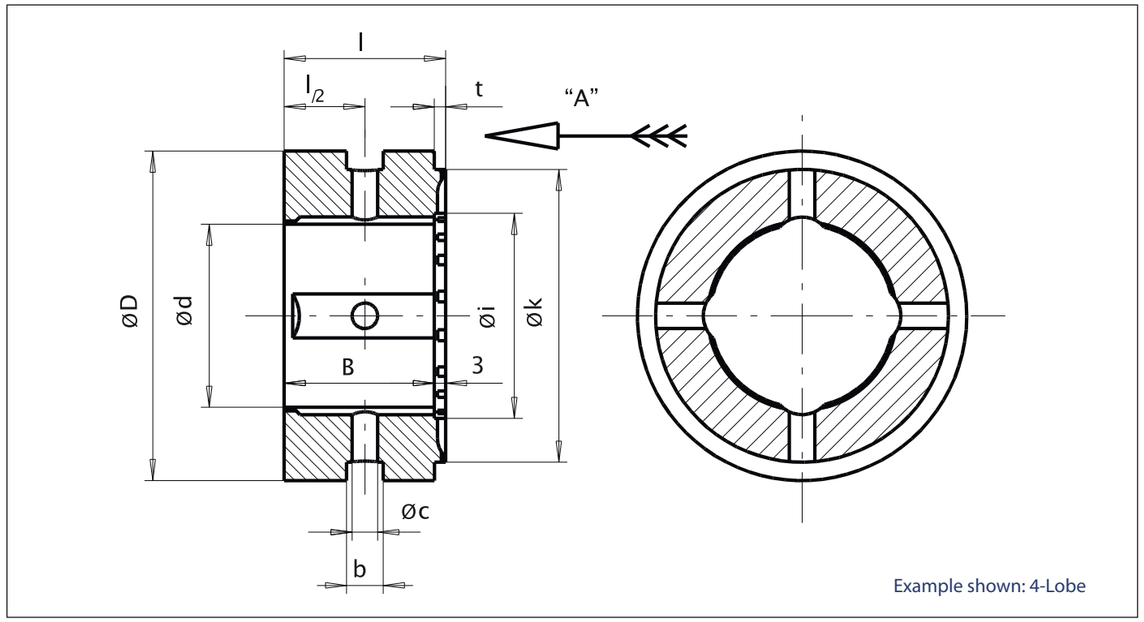
| $d^{H6}$ | B | $D_{j6}$ | D1 | l1 | c | k |
|---|---|---|---|---|---|---|
| 50 | 50 | 110 | 90 | 25 | 7 | 80 |
| 55 | 55 | 115 | 95 | 30 | 7 | 85 |
| 60 | 60 | 120 | 100 | 30 | 9 | 90 |
| 65 | 65 | 130 | 105 | 30 | 9 | 95 |
| 70 | 70 | 135 | 110 | 35 | 9 | 100 |
| 75 | 75 | 145 | 120 | 35 | 9 | 110 |
| 80 | 80 | 150 | 125 | 40 | 10 | 115 |
| 85 | 85 | 160 | 130 | 40 | 10 | 120 |
| 90 | 90 | 170 | 135 | 45 | 10 | 125 |
| 95 | 95 | 175 | 140 | 45 | 10 | 130 |
| 100 | 100 | 185 | 150 | 50 | 12 | 138 |
| 110 | 110 | 195 | 160 | 55 | 12 | 148 |
| 120 | 120 | 210 | 170 | 60 | 12 | 158 |
| 130 | 130 | 220 | 190 | 65 | 12 | 168 |
| 140 | 140 | 240 | 200 | 70 | 14 | 188 |
| 150 | 150 | 260 | 210 | 75 | 14 | 198 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical

Lubrication Groove:
- open on both sides
- closed
- open on one side

# Combined Bearing

## Journal Bearing with Single Thrust Face, Unsplit, B/D = 0.5




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | $l_{h7}$ | t | i | k | b | c |
|---|---|---|---|---|---|---|---|---|
| 20 | 10 | 47 | 13 | 1 | 24 | 41 | 4 | 3 |
| 25 | 12 | 52 | 15 | 1 | 29 | 46 | 5 | 3 |
| 30 | 15 | 62 | 18 | 1 | 34 | 56 | 6 | 5 |
| 35 | 18 | 72 | 21 | 1 | 39 | 62 | 8 | 5 |
| 40 | 20 | 80 | 23 | 1 | 44 | 70 | 8 | 6 |
| 45 | 22 | 85 | 25 | 1 | 49 | 75 | 8 | 6 |
| 50 | 25 | 90 | 28 | 2 | 56 | 80 | 10 | 7 |
| 55 | 28 | 95 | 31 | 2 | 61 | 85 | 10 | 7 |
| 60 | 30 | 100 | 33 | 2 | 66 | 90 | 10 | 9 |
| 65 | 32 | 105 | 35 | 2 | 71 | 95 | 12 | 9 |
| 70 | 35 | 110 | 38 | 2 | 76 | 100 | 12 | 9 |
| 75 | 38 | 120 | 41 | 2 | 81 | 110 | 12 | 9 |
| 80 | 40 | 125 | 43 | 2 | 86 | 115 | 14 | 10 |
| 85 | 42 | 130 | 45 | 2 | 91 | 120 | 14 | 10 |
| 90 | 45 | 135 | 48 | 2 | 96 | 125 | 14 | 10 |
| 95 | 48 | 140 | 51 | 2 | 101 | 130 | 16 | 10 |
| 100 | 50 | 150 | 53 | 2 | 106 | 138 | 16 | 12 |
| 110 | 55 | 160 | 58 | 2 | 116 | 148 | 16 | 12 |
| 120 | 60 | 170 | 63 | 3 | 126 | 158 | 16 | 12 |
| 130 | 65 | 180 | 68 | 3 | 136 | 168 | 16 | 12 |
| 140 | 70 | 200 | 73 | 3 | 146 | 188 | 16 | 14 |
| 150 | 75 | 210 | 78 | 3 | 156 | 198 | 20 | 14 |
| 160 | 80 | 220 | 83 | 3 | 166 | 208 | 20 | 14 |
| 170 | 85 | 240 | 88 | 3 | 176 | 228 | 20 | 14 |
| 180 | 90 | 250 | 93 | 3 | 186 | 238 | 20 | 16 |
| 190 | 95 | 260 | 98 | 3 | 196 | 248 | 20 | 16 |
| 200 | 100 | 270 | 103 | 3 | 206 | 258 | 20 | 16 |

Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

*4-Lobe d>25

Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

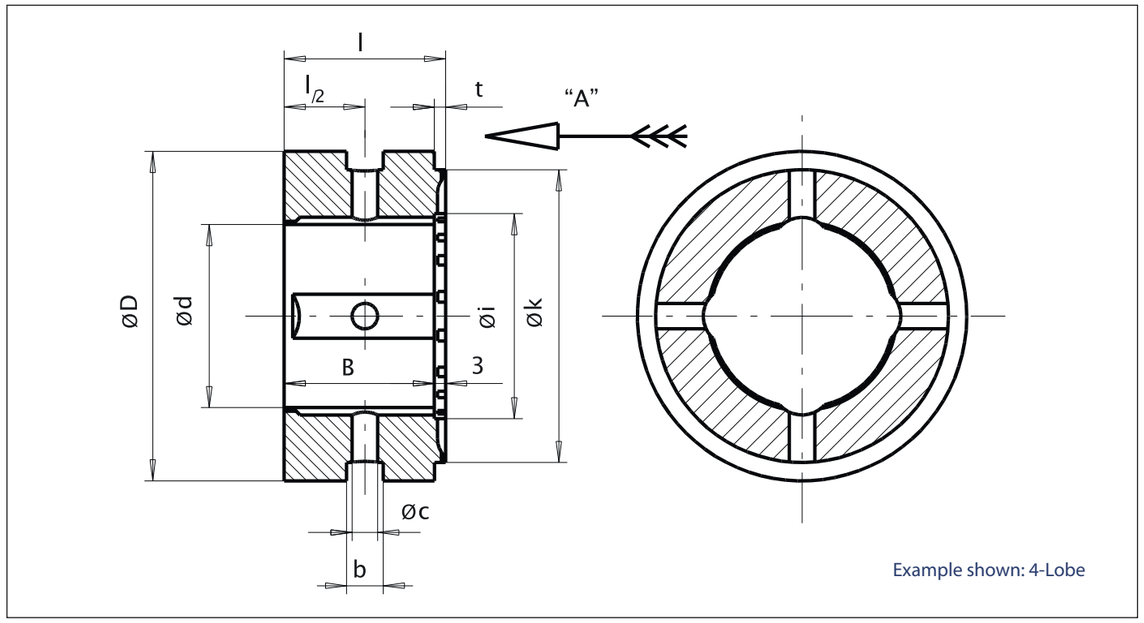
*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring



# Combined Bearing

## Journal Bearing with Single Thrust Face, Unsplit, B/D = 0.75




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | $l_{h7}$ | t | i | k | b | c |
|---|---|---|---|---|---|---|---|---|
| 17 | 12 | 40 | 15 | 1 | 20 | 34 | 4 | 3 |
| 20 | 15 | 47 | 18 | 1 | 24 | 41 | 4 | 3 |
| 25 | 19 | 52 | 22 | 1 | 29 | 46 | 5 | 3 |
| 30 | 22 | 62 | 25 | 1 | 34 | 56 | 6 | 5 |
| 35 | 26 | 72 | 29 | 1 | 39 | 62 | 8 | 5 |
| 40 | 30 | 80 | 33 | 1 | 44 | 70 | 8 | 6 |
| 45 | 34 | 85 | 37 | 1 | 49 | 75 | 8 | 6 |
| 50 | 37 | 90 | 40 | 2 | 56 | 80 | 10 | 7 |
| 55 | 41 | 95 | 44 | 2 | 61 | 85 | 10 | 7 |
| 60 | 45 | 100 | 48 | 2 | 66 | 90 | 10 | 9 |
| 65 | 49 | 105 | 52 | 2 | 71 | 95 | 12 | 9 |
| 70 | 52 | 110 | 55 | 2 | 76 | 100 | 12 | 9 |
| 75 | 56 | 120 | 59 | 2 | 81 | 110 | 12 | 9 |
| 80 | 60 | 125 | 63 | 2 | 86 | 115 | 14 | 10 |
| 85 | 64 | 130 | 67 | 2 | 91 | 120 | 14 | 10 |
| 90 | 67 | 135 | 70 | 2 | 96 | 125 | 14 | 10 |
| 95 | 71 | 140 | 74 | 2 | 101 | 130 | 16 | 10 |
| 100 | 75 | 150 | 78 | 2 | 106 | 138 | 16 | 12 |
| 110 | 82 | 160 | 85 | 2 | 116 | 148 | 16 | 12 |
| 120 | 90 | 170 | 93 | 3 | 126 | 158 | 16 | 12 |
| 130 | 97 | 180 | 100 | 3 | 136 | 168 | 16 | 12 |
| 140 | 105 | 200 | 108 | 3 | 146 | 188 | 16 | 14 |
| 150 | 112 | 210 | 115 | 3 | 156 | 198 | 20 | 14 |
| 160 | 120 | 220 | 123 | 3 | 166 | 208 | 20 | 14 |
| 170 | 127 | 240 | 130 | 3 | 176 | 228 | 20 | 14 |
| 180 | 135 | 250 | 138 | 3 | 186 | 238 | 20 | 16 |
| 190 | 145 | 260 | 145 | 3 | 196 | 248 | 20 | 16 |
| 200 | 150 | 270 | 153 | 3 | 206 | 258 | 20 | 16 |

Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

*4-Lobe d>25

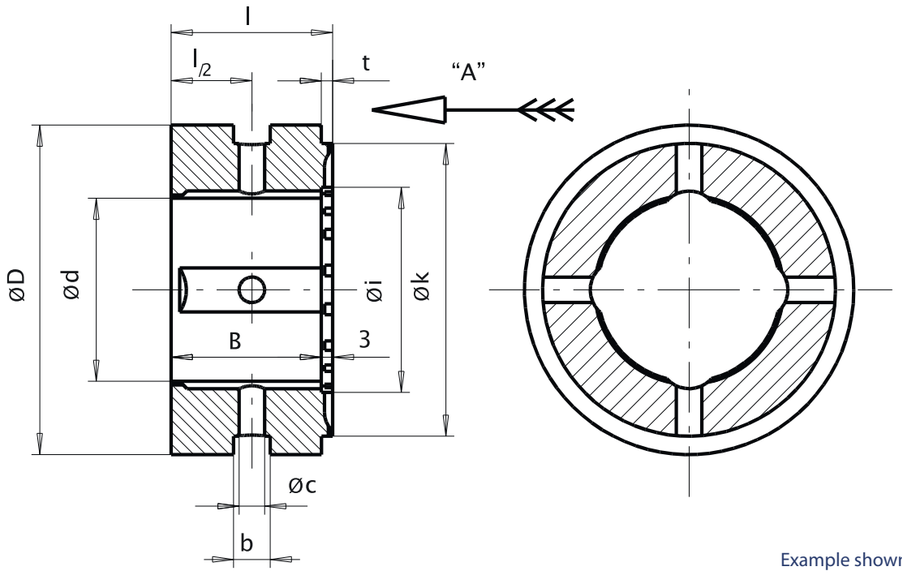
Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring

# Combined Bearing

## Journal Bearing with Single Thrust Face, Unsplit, B/D = 1.0




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | $l_{h7}$ | t | i | k | b | c |
|---|---|---|---|---|---|---|---|---|
| 10 | 10 | 30 | 13 | 1 | 13 | 24 | 3 | 2 |
| 12 | 12 | 32 | 15 | 1 | 15 | 26 | 4 | 3 |
| 15 | 15 | 35 | 18 | 1 | 18 | 29 | 4 | 3 |
| 17 | 17 | 40 | 20 | 1 | 20 | 34 | 4 | 3 |
| 20 | 20 | 47 | 23 | 1 | 24 | 41 | 6 | 3 |
| 25 | 25 | 52 | 28 | 1 | 29 | 46 | 7 | 3 |
| 30 | 30 | 62 | 33 | 1 | 34 | 56 | 8 | 5 |
| 35 | 35 | 72 | 38 | 1 | 39 | 62 | 10 | 5 |
| 40 | 40 | 80 | 43 | 1 | 44 | 70 | 10 | 6 |
| 45 | 45 | 85 | 48 | 1 | 49 | 75 | 10 | 6 |
| 50 | 50 | 90 | 53 | 2 | 56 | 80 | 12 | 7 |
| 55 | 55 | 95 | 58 | 2 | 61 | 85 | 12 | 7 |
| 60 | 60 | 100 | 63 | 2 | 66 | 90 | 12 | 9 |
| 65 | 65 | 105 | 68 | 2 | 71 | 95 | 15 | 9 |
| 70 | 70 | 110 | 73 | 2 | 76 | 100 | 15 | 9 |
| 75 | 75 | 120 | 78 | 2 | 81 | 110 | 15 | 9 |
| 80 | 80 | 125 | 83 | 2 | 86 | 115 | 18 | 10 |
| 85 | 85 | 130 | 88 | 2 | 91 | 120 | 18 | 10 |
| 90 | 90 | 135 | 93 | 2 | 96 | 125 | 18 | 10 |
| 95 | 95 | 140 | 98 | 2 | 101 | 130 | 21 | 10 |
| 100 | 100 | 150 | 103 | 2 | 106 | 138 | 21 | 12 |
| 110 | 110 | 160 | 113 | 2 | 116 | 148 | 21 | 12 |
| 120 | 120 | 170 | 123 | 3 | 126 | 158 | 21 | 12 |
| 130 | 130 | 180 | 133 | 3 | 136 | 168 | 21 | 12 |
| 140 | 140 | 200 | 143 | 3 | 146 | 188 | 21 | 14 |
| 150 | 150 | 210 | 153 | 3 | 156 | 198 | 25 | 14 |
| 160 | 160 | 220 | 163 | 3 | 166 | 208 | 25 | 14 |
| 170 | 170 | 240 | 173 | 3 | 176 | 228 | 25 | 14 |
| 180 | 180 | 250 | 183 | 3 | 186 | 238 | 25 | 16 |
| 190 | 190 | 260 | 193 | 3 | 196 | 248 | 25 | 16 |
| 200 | 200 | 270 | 203 | 3 | 206 | 258 | 25 | 16 |

Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

*4-Lobe d>25

Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

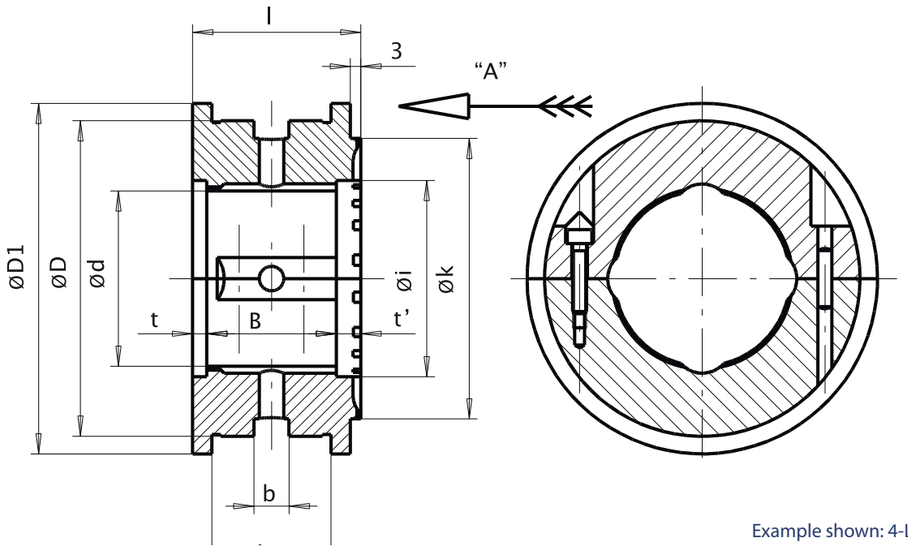
*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring



# Combined Bearing

## Journal Bearing with Single Thrust Face, Split, B/D = 0.5




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | $l1^{H7}$ | b | t | t ' | i | k |
|---|---|---|---|---|---|---|---|---|---|---|
| 55 | 28 | 95 | 105 | 41 | 27 | 8 | 5 | 8 | 61 | 85 |
| 60 | 30 | 100 | 110 | 43 | 28 | 8 | 5 | 8 | 66 | 90 |
| 65 | 32 | 105 | 115 | 45 | 29 | 9 | 5 | 8 | 71 | 95 |
| 70 | 35 | 110 | 120 | 48 | 31 | 10 | 5 | 8 | 76 | 100 |
| 75 | 38 | 120 | 130 | 51 | 32 | 10 | 5 | 8 | 81 | 110 |
| 80 | 40 | 125 | 135 | 53 | 34 | 12 | 5 | 8 | 86 | 115 |
| 85 | 42 | 130 | 140 | 55 | 35 | 12 | 5 | 8 | 91 | 120 |
| 90 | 45 | 135 | 145 | 58 | 35 | 12 | 5 | 8 | 96 | 125 |
| 95 | 48 | 140 | 150 | 61 | 36 | 13 | 5 | 8 | 101 | 130 |
| 100 | 50 | 150 | 160 | 65 | 38 | 13 | 6 | 9 | 106 | 138 |
| 110 | 55 | 160 | 175 | 70 | 41 | 14 | 6 | 9 | 116 | 148 |
| 120 | 60 | 170 | 185 | 75 | 44 | 15 | 6 | 9 | 126 | 158 |
| 130 | 65 | 180 | 195 | 80 | 47 | 15 | 6 | 9 | 136 | 168 |
| 140 | 70 | 200 | 215 | 85 | 50 | 15 | 6 | 9 | 146 | 188 |
| 150 | 75 | 210 | 225 | 90 | 53 | 18 | 6 | 9 | 156 | 198 |
| 160 | 80 | 220 | 235 | 95 | 56 | 18 | 6 | 9 | 166 | 208 |
| 170 | 85 | 240 | 255 | 100 | 59 | 18 | 6 | 9 | 176 | 228 |
| 180 | 90 | 250 | 265 | 105 | 62 | 18 | 6 | 9 | 186 | 238 |
| 190 | 95 | 260 | 275 | 110 | 65 | 18 | 6 | 9 | 196 | 248 |
| 200 | 100 | 270 | 285 | 115 | 68 | 18 | 6 | 9 | 206 | 258 |
| 210 | 105 | 280 | 300 | 118 | 70 | 18 | 5 | 8 | 218 | 290 |
| 220 | 110 | 290 | 310 | 123 | 75 | 20 | 5 | 8 | 228 | 300 |
| 230 | 115 | 300 | 320 | 128 | 80 | 20 | 5 | 8 | 238 | 308 |
| 240 | 120 | 310 | 330 | 133 | 85 | 20 | 5 | 8 | 248 | 318 |
| 250 | 125 | 330 | 350 | 138 | 90 | 22 | 5 | 8 | 258 | 338 |
| 260 | 130 | 340 | 360 | 143 | 95 | 22 | 5 | 8 | 268 | 348 |
| 270 | 135 | 350 | 370 | 148 | 95 | 22 | 5 | 8 | 278 | 358 |
| 280 | 140 | 360 | 380 | 153 | 100 | 22 | 5 | 8 | 288 | 368 |
| 290 | 145 | 370 | 390 | 158 | 105 | 25 | 5 | 8 | 298 | 378 |
| 300 | 150 | 390 | 410 | 163 | 110 | 25 | 5 | 8 | 308 | 396 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

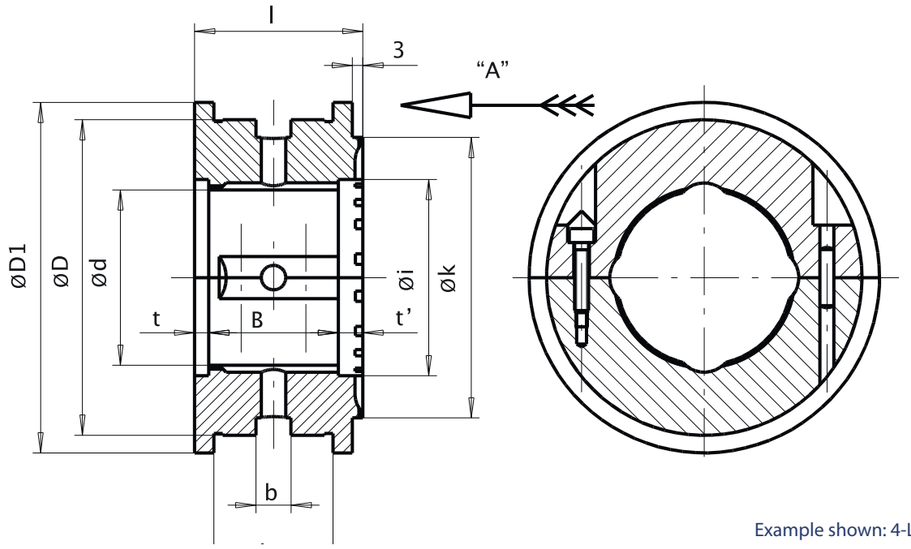
Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring

# Combined Bearing

## Journal Bearing with Single Thrust Face, Split, B/D = 0.75




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | $l1^{H7}$ | lb | t | t ’ | i | k |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 30 | 80 | 90 | 41 | 27 | 8 | 4 | 7 | 44 | 70 |
| 45 | 34 | 85 | 95 | 45 | 31 | 10 | 4 | 7 | 49 | 75 |
| 50 | 37 | 90 | 100 | 48 | 34 | 10 | 4 | 7 | 56 | 80 |
| 55 | 41 | 95 | 105 | 52 | 38 | 12 | 4 | 7 | 61 | 85 |
| 60 | 45 | 100 | 110 | 56 | 41 | 12 | 4 | 7 | 66 | 90 |
| 65 | 49 | 105 | 115 | 60 | 44 | 12 | 4 | 7 | 71 | 95 |
| 70 | 52 | 110 | 120 | 63 | 46 | 12 | 4 | 7 | 76 | 100 |
| 75 | 56 | 120 | 130 | 67 | 48 | 12 | 4 | 7 | 81 | 110 |
| 80 | 60 | 125 | 135 | 71 | 52 | 18 | 4 | 7 | 86 | 115 |
| 85 | 64 | 130 | 140 | 75 | 55 | 18 | 4 | 7 | 91 | 120 |
| 90 | 67 | 135 | 145 | 78 | 55 | 18 | 4 | 7 | 96 | 125 |
| 95 | 71 | 140 | 150 | 82 | 57 | 21 | 4 | 7 | 101 | 130 |
| 100 | 75 | 150 | 160 | 86 | 59 | 21 | 4 | 7 | 106 | 138 |
| 110 | 82 | 160 | 175 | 93 | 64 | 21 | 4 | 7 | 116 | 148 |
| 120 | 90 | 170 | 185 | 101 | 70 | 21 | 4 | 7 | 126 | 158 |
| 130 | 97 | 180 | 195 | 108 | 75 | 21 | 4 | 7 | 136 | 168 |
| 140 | 105 | 200 | 215 | 116 | 81 | 21 | 4 | 7 | 146 | 188 |
| 150 | 112 | 210 | 225 | 123 | 86 | 25 | 4 | 7 | 156 | 198 |
| 160 | 120 | 220 | 235 | 131 | 92 | 25 | 4 | 7 | 166 | 208 |
| 170 | 127 | 240 | 255 | 138 | 97 | 25 | 4 | 7 | 176 | 228 |
| 180 | 135 | 250 | 265 | 146 | 103 | 25 | 4 | 7 | 186 | 238 |
| 190 | 142 | 260 | 275 | 153 | 108 | 25 | 4 | 7 | 196 | 248 |
| 200 | 150 | 270 | 285 | 161 | 114 | 25 | 4 | 7 | 206 | 258 |
| 210 | 157 | 280 | 300 | 170 | 120 | 25 | 5 | 8 | 218 | 290 |
| 220 | 165 | 290 | 310 | 178 | 125 | 25 | 5 | 8 | 228 | 300 |
| 230 | 172 | 300 | 320 | 185 | 130 | 25 | 5 | 8 | 238 | 308 |
| 240 | 180 | 310 | 330 | 193 | 135 | 25 | 5 | 8 | 248 | 318 |
| 250 | 187 | 330 | 350 | 200 | 150 | 30 | 5 | 8 | 258 | 338 |
| 260 | 195 | 340 | 360 | 208 | 155 | 30 | 5 | 8 | 268 | 348 |
| 270 | 202 | 350 | 370 | 215 | 155 | 30 | 5 | 8 | 278 | 358 |
| 280 | 210 | 360 | 380 | 223 | 160 | 30 | 5 | 8 | 288 | 368 |
| 290 | 217 | 370 | 390 | 230 | 170 | 35 | 5 | 8 | 298 | 378 |
| 300 | 225 | 390 | 410 | 238 | 175 | 35 | 5 | 8 | 308 | 396 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

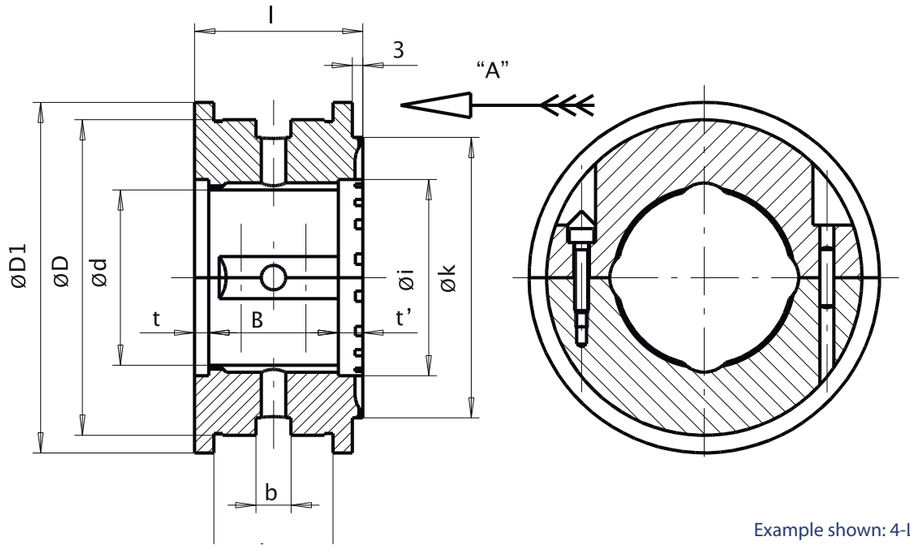
*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring



# Combined Bearing

## Journal Bearing with Single Thrust Face, Split, B/D = 1.0




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | $l1^{H7}$ | b | t | t ’ | i | k |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 30 | 62 | 72 | 39 | 26 | 7 | 3 | 6 | 34 | 56 |
| 35 | 35 | 72 | 82 | 44 | 30 | 7 | 3 | 6 | 39 | 62 |
| 40 | 40 | 80 | 90 | 49 | 35 | 8 | 3 | 6 | 44 | 70 |
| 45 | 45 | 85 | 95 | 54 | 40 | 10 | 3 | 6 | 49 | 75 |
| 50 | 50 | 90 | 100 | 59 | 45 | 10 | 3 | 6 | 56 | 80 |
| 55 | 55 | 95 | 105 | 64 | 50 | 12 | 3 | 6 | 61 | 85 |
| 60 | 60 | 100 | 110 | 69 | 54 | 12 | 3 | 6 | 66 | 90 |
| 65 | 65 | 105 | 115 | 74 | 58 | 12 | 3 | 6 | 71 | 95 |
| 70 | 70 | 110 | 120 | 79 | 62 | 12 | 3 | 6 | 76 | 100 |
| 75 | 75 | 120 | 130 | 84 | 65 | 12 | 3 | 6 | 81 | 110 |
| 80 | 80 | 125 | 135 | 89 | 70 | 18 | 3 | 6 | 86 | 115 |
| 85 | 85 | 130 | 140 | 94 | 74 | 18 | 3 | 6 | 91 | 120 |
| 90 | 90 | 135 | 145 | 99 | 76 | 18 | 3 | 6 | 96 | 125 |
| 95 | 95 | 140 | 150 | 104 | 79 | 21 | 3 | 6 | 101 | 130 |
| 100 | 100 | 150 | 160 | 109 | 82 | 21 | 3 | 6 | 106 | 138 |
| 110 | 110 | 160 | 175 | 119 | 90 | 21 | 3 | 6 | 116 | 148 |
| 120 | 120 | 170 | 185 | 129 | 98 | 21 | 3 | 6 | 126 | 158 |
| 130 | 130 | 180 | 195 | 139 | 106 | 21 | 3 | 6 | 136 | 168 |
| 140 | 140 | 200 | 215 | 149 | 114 | 21 | 3 | 6 | 146 | 188 |
| 150 | 150 | 210 | 225 | 159 | 122 | 25 | 3 | 6 | 156 | 198 |
| 160 | 160 | 220 | 235 | 169 | 130 | 25 | 3 | 6 | 166 | 208 |
| 170 | 170 | 240 | 255 | 179 | 138 | 25 | 3 | 6 | 176 | 228 |
| 180 | 180 | 250 | 265 | 189 | 146 | 25 | 3 | 6 | 186 | 238 |
| 190 | 190 | 260 | 275 | 199 | 154 | 25 | 3 | 6 | 196 | 248 |
| 200 | 200 | 270 | 285 | 209 | 162 | 25 | 3 | 6 | 206 | 258 |
| 210 | 210 | 280 | 300 | 223 | 160 | 25 | 5 | 8 | 218 | 290 |
| 220 | 220 | 290 | 310 | 233 | 170 | 25 | 5 | 8 | 228 | 300 |
| 230 | 230 | 300 | 320 | 243 | 180 | 25 | 5 | 8 | 238 | 308 |
| 240 | 240 | 310 | 330 | 253 | 190 | 25 | 5 | 8 | 248 | 318 |
| 250 | 250 | 330 | 350 | 263 | 200 | 30 | 5 | 8 | 258 | 338 |
| 260 | 260 | 340 | 360 | 273 | 210 | 30 | 5 | 8 | 268 | 348 |
| 270 | 270 | 350 | 370 | 283 | 210 | 30 | 5 | 8 | 278 | 358 |
| 280 | 280 | 360 | 380 | 293 | 210 | 30 | 5 | 8 | 288 | 368 |
| 290 | 290 | 370 | 390 | 303 | 220 | 35 | 5 | 8 | 298 | 378 |
| 300 | 300 | 390 | 410 | 313 | 230 | 35 | 5 | 8 | 308 | 396 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

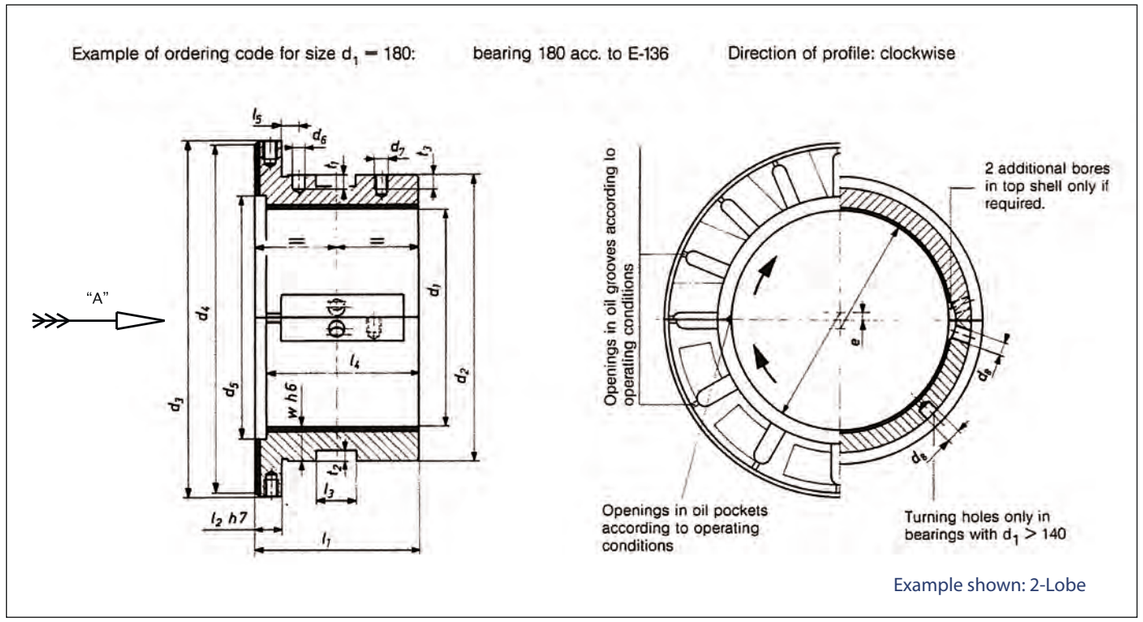
Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring

# Combined Bearing

## Journal Bearing with Single Thrust Face, Split, E-136



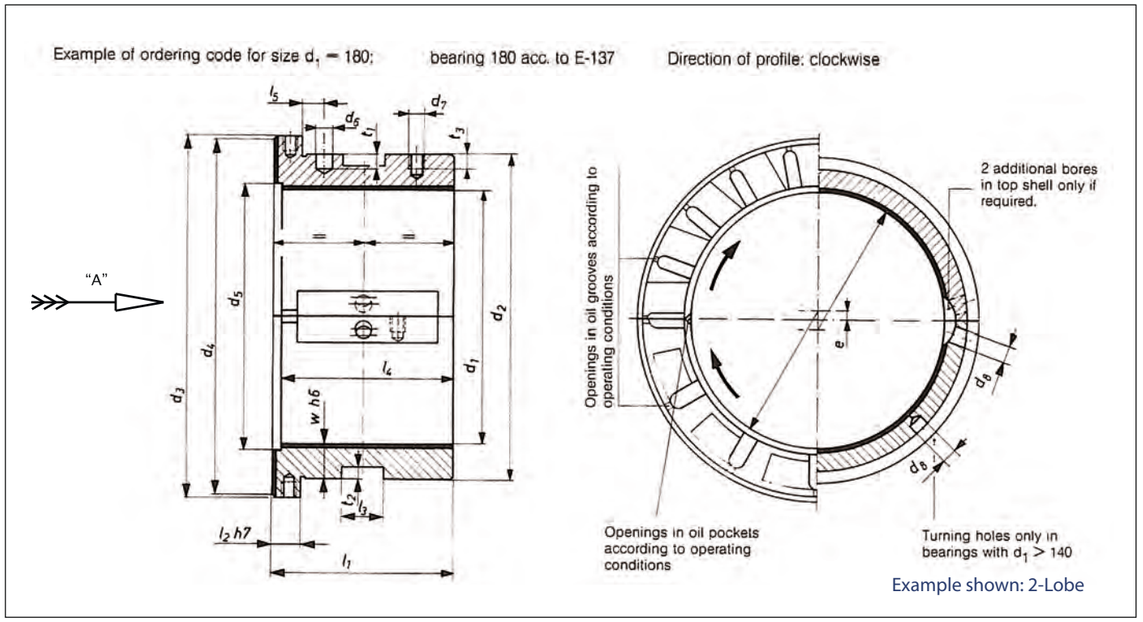

Example shown: 2-Lobe

| d1 | d2 | d3 | d4 | d5 | d6 | d7 | d8 | e | l1 | l2 | l3 | l4 | l5 | t1 | t2 | t3 | w | Ring area mm² | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 40m6 | 45 | 43 | 29 | 2 | - | 2,5 | 0,04 | 20 | 4 | 5 | 18 | 2 | 2 | 3 | - | 7,5 | 791 | 0,11 |
| 28 | 44m6 | 49 | 47 | 32 | 2 | - | 2,5 | 0,045 | 22 | 4 | 6 | 20 | 2 | 2 | 3 | - | 8 | 930 | 0,14 |
| 32 | 48m6 | 53 | 51 | 36 | 2 | - | 3 | 0,045 | 25 | 4,5 | 6 | 23 | 3 | 2 | 3 | - | 8 | 1020 | 0,18 |
| 36 | 52m6 | 58 | 56 | 41 | 3 | - | 3 | 0,05 | 28 | 5 | 7 | 25,5 | 3 | 3 | 3 | - | 8 | 1140 | 0,23 |
| 40 | 56m6 | 64 | 62 | 45 | 3 | - | 3,5 | 0,05 | 32 | 6 | 8 | 29,5 | 4 | 3 | 3 | - | 8 | 1430 | 0,28 |
| 45 | 60m6 | 72 | 70 | 51 | 3 | - | 3,5 | 0,056 | 35 | 5 | 9 | 32 | 4 | 3 | 3 | - | 7,5 | 1810 | 0,32 |
| 50 | 65m6 | 80 | 78 | 56 | 4 | - | 4 | 0,056 | 35 | 5 | 10 | 32 | 5 | 3 | 3 | - | 7,5 | 2340 | 0,37 |
| 56 | 70m6 | 90 | 88 | 63 | 4 | - | 5 | 0,063 | 40 | 5 | 10 | 36,5 | 6 | 3 | 3 | - | 7 | 2960 | 0,49 |
| 63 | 80m6 | 100 | 98 | 70 | 4 | - | 5 | 0,063 | 45 | 7,5 | 12 | 41,5 | 6 | 4 | 4 | - | 8,5 | 3690 | 0,73 |
| 70 | 90m6 | 110 | 108 | 78 | 5 | - | 6 | 0,07 | 50 | 7,5 | 12 | 46 | 6 | 4 | 5 | - | 10 | 4380 | 1,1 |
| 80 | 105m6 | 125 | 123 | 88 | 5 | - | 6 | 0,08 | 60 | 10 | 15 | 56 | 6,5 | 5 | 6 | - | 12,5 | 5800 | 1,7 |
| 90 | 115m6 | 140 | 138 | 99 | 6 | - | 8 | 0,09 | 65 | 10 | 15 | 60,5 | 8 | 5 | 6 | - | 12,5 | 7260 | 2,3 |
| 100 | 130m6 | 155 | 152 | 110 | 7 | - | 8 | 0,1 | 75 | 12,5 | 15 | 70 | 9 | 6 | 7 | - | 15 | 8640 | 3,3 |
| 110 | 140k6 | 172 | 169 | 121 | 7 | - | 10 | 0,11 | 80 | 12.5 | 20 | 74,5 | 9 | 8 | 7 | - | 15 | 10900 | 3,8 |
| 125 | 160k6 | 195 | 192 | 137 | 9 | - | 10 | 0,125 | 95 | 15 | 20 | 89 | 12 | 8 | 8 | - | 17,5 | 14200 | 6,3 |
| 140 | 180k6 | 215 | 212 | 152 | 9 | - | 12 | 0,14 | 105 | 15 | 20 | 99 | 14 | 8 | 9 | - | 20 | 17200 | 9,1 |
| 160 | 205k6 | 245 | 242 | 174 | 11 | M8 | 12 | 0,16 | 120 | 17.5 | 25 | 113 | 15 | 10 | 10 | 15 | 22,5 | 22200 | 13,5 |
| 180 | 230k6 | 280 | 277 | 196 | 11 | M8 | 14 | 0,18 | 135 | 20 | 25 | 127 | 18 | 10 | 11 | 15 | 25 | 30100 | 20 |
| 200 | 260k6 | 305 | 302 | 216 | 13 | M8 | 14 | 0,2 | 150 | 22,5 | 25 | 142 | 20 | 15 | 12 | 15 | 30 | 35000 | 28 |
| 225 | 290k6 | 345 | 342 | 243 | 13 | M10 | 16 | 0,225 | 170 | 25 | 32 | 161 | 20 | 15 | 13 | 20 | 32,5 | 45500 | 39 |
| 250 | 325k6 | 385 | 382 | 270 | 15 | M10 | 16 | 0,25 | 190 | 30 | 32 | 180 | 25 | 18 | 14 | 20 | 37,5 | 57400 | 55 |
| 280 | 360j6 | 430 | 426 | 300 | 15 | M10 | 18 | 0,28 | 210 | 32,5 | 32 | 200 | 28 | 20 | 16 | 20 | 40 | 71800 | 73 |
| 315 | 410j6 | 480 | 476 | 337 | 18 | M12 | 18 | 0,315 | 235 | 35 | 40 | 224 | 30 | 20 | 17 | 23 | 47,5 | 88800 | 107 |
| 355 | 460j6 | 540 | 536 | 379 | 18 | M16 | 20 | 0,355 | 265 | 40 | 40 | 253 | 35 | 20 | 19 | 30 | 52,5 | 119000 | 153 |
| 400 | 515js6 | 610 | 606 | 428 | 22 | M16 | 20 | 0,4 | 300 | 45 | 40 | 286 | 40 | 25 | 21 | 30 | 57,5 | 145000 | 215 |
| 450 | 580js6 | 685 | 681 | 480 | 27 | M20 | 25 | 0,45 | 340 | 52,5 | 50 | 325 | 60 | 30 | 23 | 33 | 65 | 183000 | 310 |
| 500 | 545js6 | 760 | 756 | 532 | 32 | M20 | 25 | 0,5 | 375 | 57,5 | 50 | 359 | 60 | 30 | 25 | 33 | 72,5 | 227000 | 425 |



# Combined Bearing

## Journal Bearing with Single Thrust Face, Split, E-137

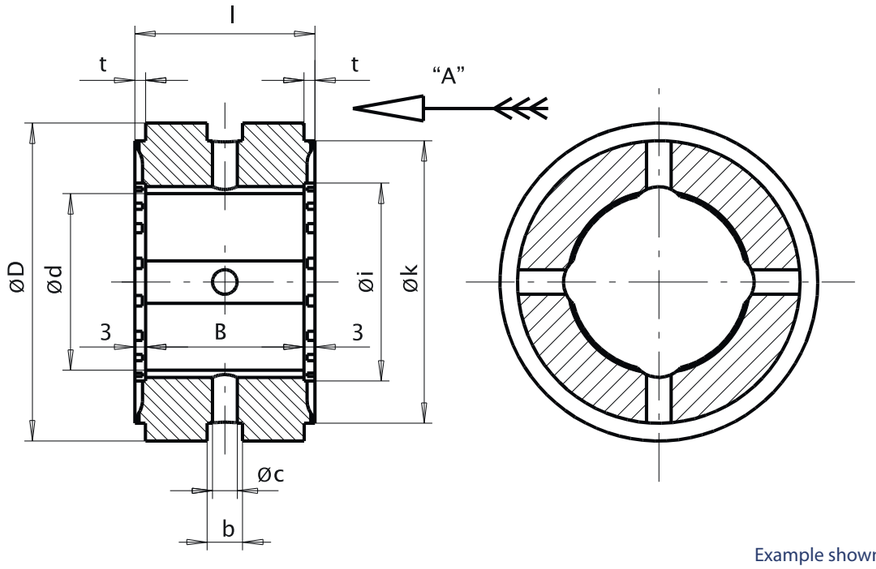



Example shown: 2-Lobe

| d1 | d2 | d3 | d4 | d5 | d6 | d7 | d8 | e | l1 | l2 | l3 | l4 | l5 | t1 | t2 | t3 | w | Ring area mm² | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | 130m6 | 142 | 140 | 105 | 7 | - | 8 | 0,1 | 75 | 12,5 | 15 | 72,5 | 9 | 6 | 4 | - | 15 | 6730 | 3,2 |
| 110 | 140k6 | 156 | 153 | 115 | 7 | - | 10 | 0,11 | 80 | 12,5 | 20 | 77,5 | 9 | 6 | 5 | - | 15 | 8000 | 3,7 |
| 125 | 160k6 | 180 | 177 | 133 | 9 | - | 10 | 0,125 | 95 | 15 | 20 | 91 | 12 | 8 | 5 | - | 17,5 | 10700 | 6 |
| 140 | 180k6 | 200 | 197 | 148 | 9 | - | 12 | 0,14 | 105 | 15 | 20 | 101 | 14 | 8 | 5 | - | 20 | 13300 | 8,5 |
| 160 | 205k6 | 227 | 224 | 168 | 11 | M8 | 12 | 0,16 | 120 | 17,5 | 25 | 116 | 15 | 10 | 6 | 15 | 22,5 | 17200 | 12 |
| 180 | 230k6 | 254 | 251 | 188 | 11 | M8 | 14 | 0,18 | 135 | 20 | 25 | 131 | 18 | 10 | 6 | 15 | 25 | 21700 | 17 |
| 200 | 260k6 | 283 | 280 | 210 | 13 | M8 | 14 | 0,2 | 150 | 22,5 | 25 | 145 | 20 | 15 | 6 | 15 | 30 | 26900 | 25 |
| 225 | 290k6 | 318 | 315 | 235 | 13 | M10 | 16 | 0,225 | 170 | 25 | 32 | 165 | 20 | 15 | 8 | 20 | 32,5 | 34600 | 35 |
| 250 | 325k6 | 352 | 349 | 260 | 15 | M10 | 16 | 0,25 | 190 | 30 | 32 | 185 | 25 | 18 | 8 | 20 | 37,5 | 42600 | 51 |
| 280 | 360j6 | 396 | 393 | 295 | 15 | M10 | 18 | 0,28 | 210 | 32,5 | 32 | 202,5 | 28 | 20 | 8 | 20 | 40 | 53000 | 68 |
| 315 | 410j6 | 444 | 440 | 330 | 18 | M12 | 18 | 0,315 | 235 | 35 | 40 | 227,5 | 30 | 20 | 10 | 23 | 47,5 | 66500 | 100 |
| 355 | 460j6 | 498 | 494 | 370 | 18 | M16 | 20 | 0,355 | 265 | 40 | 40 | 275,5 | 35 | 20 | 10 | 30 | 52,5 | 84100 | 142 |
| 400 | 515js6 | 564 | 560 | 420 | 22 | M16 | 20 | 0,4 | 300 | 45 | 40 | 290 | 40 | 25 | 10 | 30 | 57,5 | 108000 | 202 |
| 450 | 580js6 | 633 | 629 | 470 | 27 | M20 | 25 | 0,45 | 340 | 52,5 | 50 | 330 | 60 | 30 | 13 | 33 | 65 | 137000 | 290 |
| 500 | 645js6 | 700 | 696 | 5207 | 32 | M20 | 25 | 0,5 | 375 | 57,5 | 50 | 365 | 60 | 30 | 13 | 33 | 72,5 | 168000 | 397 |

# Combined Bearing

## Journal Bearing with Double Thrust Face, Unsplit, B/D = 0.5




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | $l^{h7}$ | b | c | t | i | k |
|---|---|---|---|---|---|---|---|---|
| 20 | 10 | 47 | 16 | 4 | 3 | 1 | 24 | 41 |
| 25 | 12 | 52 | 18 | 5 | 3 | 1 | 29 | 46 |
| 30 | 15 | 62 | 21 | 6 | 5 | 1 | 34 | 56 |
| 35 | 18 | 72 | 24 | 8 | 5 | 1 | 39 | 62 |
| 40 | 20 | 80 | 26 | 8 | 6 | 1 | 44 | 70 |
| 45 | 22 | 85 | 28 | 8 | 6 | 1 | 49 | 75 |
| 50 | 25 | 90 | 31 | 10 | 7 | 2 | 56 | 80 |
| 55 | 28 | 95 | 34 | 10 | 7 | 2 | 61 | 85 |
| 60 | 30 | 100 | 36 | 10 | 9 | 2 | 66 | 90 |
| 65 | 32 | 105 | 38 | 12 | 9 | 2 | 71 | 95 |
| 70 | 35 | 110 | 41 | 12 | 9 | 2 | 76 | 100 |
| 75 | 38 | 120 | 44 | 12 | 9 | 2 | 81 | 110 |
| 80 | 40 | 125 | 46 | 14 | 10 | 2 | 86 | 115 |
| 85 | 42 | 130 | 48 | 14 | 10 | 2 | 91 | 120 |
| 90 | 45 | 135 | 51 | 14 | 10 | 2 | 96 | 125 |
| 95 | 48 | 140 | 54 | 16 | 10 | 2 | 101 | 130 |
| 100 | 50 | 150 | 56 | 16 | 12 | 2 | 106 | 138 |
| 110 | 55 | 160 | 61 | 16 | 12 | 2 | 116 | 148 |
| 120 | 60 | 170 | 66 | 16 | 12 | 3 | 126 | 158 |
| 130 | 65 | 180 | 71 | 16 | 12 | 3 | 136 | 168 |
| 140 | 70 | 200 | 76 | 16 | 14 | 3 | 146 | 188 |
| 150 | 75 | 210 | 81 | 20 | 14 | 3 | 156 | 198 |
| 160 | 80 | 220 | 86 | 20 | 14 | 3 | 166 | 208 |
| 170 | 85 | 240 | 91 | 20 | 14 | 3 | 176 | 228 |
| 180 | 90 | 250 | 96 | 20 | 16 | 3 | 186 | 238 |
| 190 | 95 | 260 | 101 | 20 | 16 | 3 | 196 | 248 |
| 200 | 100 | 270 | 106 | 20 | 16 | 3 | 206 | 258 |

Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

*4-Lobe d>25

Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

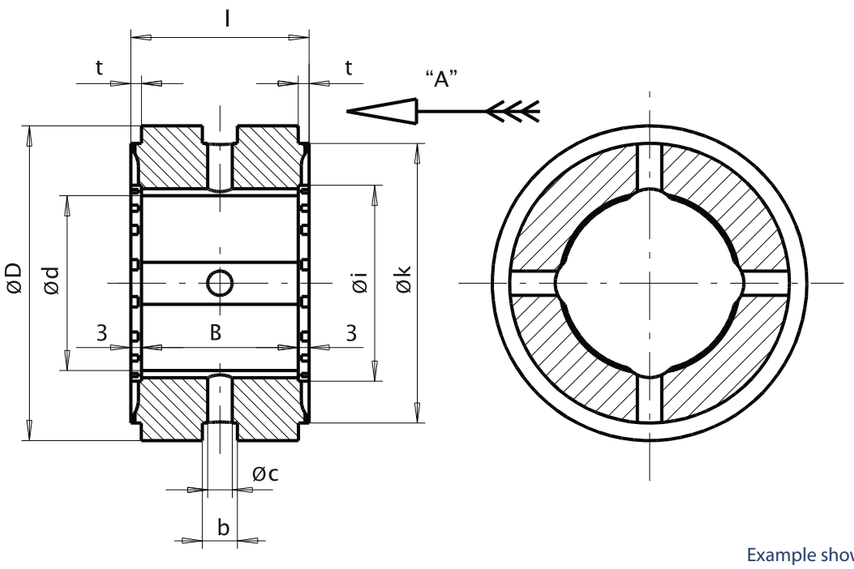
*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring



# Combined Bearing

## Journal Bearing with Double Thrust Face, Unsplit, B/D = 0.75




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | $l_{h7}$ | b | c | t | i | k |
|---|---|---|---|---|---|---|---|---|
| 17 | 12 | 40 | 18 | 4 | 3 | 1 | 20 | 34 |
| 20 | 15 | 47 | 21 | 4 | 3 | 1 | 24 | 41 |
| 25 | 19 | 52 | 25 | 5 | 3 | 1 | 29 | 46 |
| 30 | 22 | 62 | 28 | 6 | 5 | 1 | 34 | 56 |
| 35 | 26 | 72 | 32 | 8 | 5 | 1 | 39 | 62 |
| 40 | 30 | 80 | 36 | 8 | 6 | 1 | 44 | 70 |
| 45 | 34 | 85 | 40 | 8 | 6 | 1 | 49 | 75 |
| 50 | 37 | 90 | 43 | 10 | 7 | 2 | 56 | 80 |
| 55 | 41 | 95 | 47 | 10 | 7 | 2 | 61 | 85 |
| 60 | 45 | 100 | 51 | 10 | 9 | 2 | 66 | 90 |
| 65 | 49 | 105 | 55 | 12 | 9 | 2 | 71 | 95 |
| 70 | 52 | 110 | 58 | 12 | 9 | 2 | 76 | 100 |
| 75 | 56 | 120 | 62 | 12 | 9 | 2 | 81 | 110 |
| 80 | 60 | 125 | 66 | 14 | 10 | 2 | 86 | 115 |
| 85 | 64 | 130 | 70 | 14 | 10 | 2 | 91 | 120 |
| 90 | 67 | 135 | 73 | 14 | 10 | 2 | 96 | 125 |
| 95 | 71 | 140 | 77 | 16 | 10 | 2 | 101 | 130 |
| 100 | 75 | 150 | 81 | 16 | 12 | 2 | 106 | 138 |
| 110 | 82 | 160 | 88 | 16 | 12 | 2 | 116 | 148 |
| 120 | 90 | 170 | 96 | 16 | 12 | 3 | 126 | 158 |
| 130 | 97 | 180 | 103 | 16 | 12 | 3 | 136 | 168 |
| 140 | 105 | 200 | 111 | 16 | 14 | 3 | 146 | 188 |
| 150 | 112 | 210 | 118 | 20 | 14 | 3 | 156 | 198 |
| 160 | 120 | 220 | 126 | 20 | 14 | 3 | 166 | 208 |
| 170 | 127 | 240 | 133 | 20 | 14 | 3 | 176 | 228 |
| 180 | 135 | 250 | 141 | 20 | 16 | 3 | 186 | 238 |
| 190 | 142 | 260 | 148 | 20 | 16 | 3 | 196 | 248 |
| 200 | 150 | 270 | 156 | 20 | 16 | 3 | 206 | 258 |

Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

*4-Lobe d>25

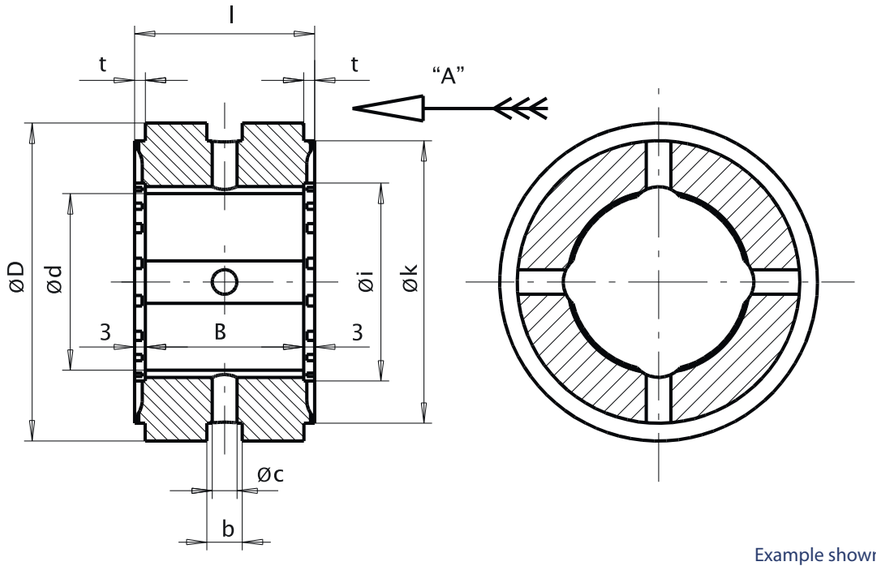
Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring

# Combined Bearing

## Journal Bearing with Double Thrust Face, Unsplit, B/D = 1.0




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | $l_{h7}$ | b | c | t | i | k |
|---|---|---|---|---|---|---|---|---|
| 10 | 10 | 30 | 16 | 3 | 2 | 1 | 13 | 24 |
| 12 | 12 | 32 | 18 | 4 | 3 | 1 | 15 | 26 |
| 15 | 15 | 35 | 21 | 4 | 3 | 1 | 18 | 29 |
| 17 | 17 | 40 | 23 | 4 | 3 | 1 | 20 | 34 |
| 20 | 20 | 47 | 26 | 6 | 3 | 1 | 24 | 41 |
| 25 | 25 | 52 | 31 | 7 | 3 | 1 | 29 | 46 |
| 30 | 30 | 62 | 36 | 8 | 5 | 1 | 34 | 56 |
| 35 | 35 | 72 | 41 | 10 | 5 | 1 | 39 | 62 |
| 40 | 40 | 80 | 46 | 10 | 6 | 1 | 44 | 70 |
| 45 | 45 | 85 | 51 | 10 | 6 | 1 | 49 | 75 |
| 50 | 50 | 90 | 56 | 12 | 7 | 2 | 56 | 80 |
| 55 | 55 | 95 | 61 | 12 | 7 | 2 | 61 | 85 |
| 60 | 60 | 100 | 66 | 12 | 9 | 2 | 66 | 90 |
| 65 | 65 | 105 | 71 | 15 | 9 | 2 | 71 | 95 |
| 70 | 70 | 110 | 76 | 15 | 9 | 2 | 76 | 100 |
| 75 | 75 | 120 | 81 | 15 | 9 | 2 | 81 | 110 |
| 80 | 80 | 125 | 86 | 18 | 10 | 2 | 86 | 115 |
| 85 | 85 | 130 | 91 | 18 | 10 | 2 | 91 | 120 |
| 90 | 90 | 135 | 96 | 18 | 10 | 2 | 96 | 125 |
| 95 | 95 | 140 | 101 | 21 | 10 | 2 | 101 | 130 |
| 100 | 100 | 150 | 106 | 21 | 12 | 2 | 106 | 138 |
| 110 | 110 | 160 | 116 | 21 | 12 | 2 | 116 | 148 |
| 120 | 120 | 170 | 126 | 21 | 12 | 3 | 126 | 158 |
| 130 | 130 | 180 | 136 | 21 | 12 | 3 | 136 | 168 |
| 140 | 140 | 200 | 146 | 21 | 14 | 3 | 146 | 188 |
| 150 | 150 | 210 | 156 | 25 | 14 | 3 | 156 | 198 |
| 160 | 160 | 220 | 166 | 25 | 14 | 3 | 166 | 208 |
| 170 | 170 | 240 | 176 | 25 | 14 | 3 | 176 | 228 |
| 180 | 180 | 250 | 186 | 25 | 16 | 3 | 186 | 238 |
| 190 | 190 | 260 | 196 | 25 | 16 | 3 | 196 | 248 |
| 200 | 200 | 270 | 206 | 25 | 16 | 3 | 206 | 258 |

Bore types:
- 4-Lobe*
- 3-Lobe
- lemon bore
- cylindrical

*4-Lobe d>25

Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

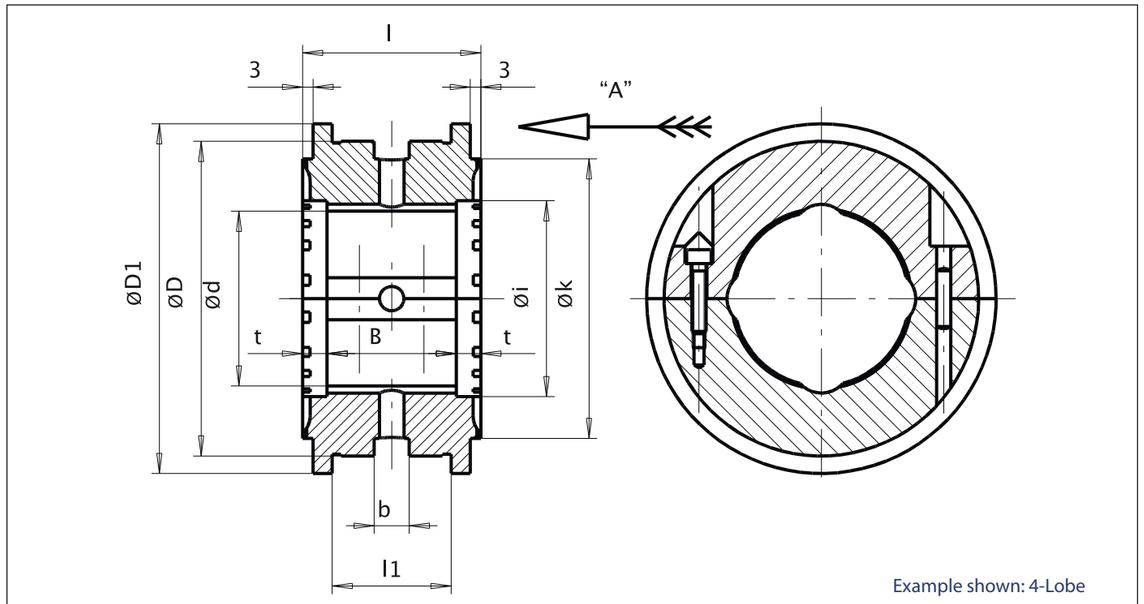
*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring



# Combined Bearing

## Journal Bearing with Double Thrust Face, Split, B/D = 0.5




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | $l1^{H7}$ | b | t | i | k |
|---|---|---|---|---|---|---|---|---|---|
| 55 | 28 | 95 | 105 | 44 | 27 | 8 | 8 | 61 | 85 |
| 60 | 30 | 100 | 110 | 46 | 28 | 8 | 8 | 66 | 90 |
| 65 | 32 | 105 | 115 | 48 | 29 | 9 | 8 | 71 | 95 |
| 70 | 35 | 110 | 120 | 51 | 31 | 10 | 8 | 76 | 100 |
| 75 | 38 | 120 | 130 | 54 | 32 | 10 | 8 | 81 | 110 |
| 80 | 40 | 125 | 135 | 56 | 34 | 12 | 8 | 86 | 115 |
| 85 | 42 | 130 | 140 | 58 | 35 | 12 | 8 | 91 | 120 |
| 90 | 45 | 135 | 145 | 61 | 35 | 12 | 8 | 96 | 125 |
| 95 | 48 | 140 | 150 | 64 | 36 | 13 | 8 | 101 | 130 |
| 100 | 50 | 150 | 160 | 68 | 38 | 13 | 9 | 106 | 138 |
| 110 | 55 | 160 | 175 | 73 | 41 | 14 | 9 | 116 | 148 |
| 120 | 60 | 170 | 185 | 78 | 44 | 15 | 9 | 126 | 158 |
| 130 | 65 | 180 | 195 | 83 | 47 | 15 | 9 | 136 | 168 |
| 140 | 70 | 200 | 215 | 88 | 50 | 15 | 9 | 146 | 188 |
| 150 | 75 | 210 | 225 | 93 | 53 | 18 | 9 | 156 | 198 |
| 160 | 80 | 220 | 235 | 98 | 56 | 18 | 9 | 166 | 208 |
| 170 | 85 | 240 | 255 | 103 | 59 | 18 | 9 | 176 | 228 |
| 180 | 90 | 250 | 265 | 108 | 62 | 18 | 9 | 186 | 238 |
| 190 | 95 | 260 | 275 | 113 | 65 | 18 | 9 | 196 | 248 |
| 200 | 100 | 270 | 285 | 118 | 68 | 18 | 9 | 206 | 258 |
| 210 | 105 | 280 | 300 | 121 | 70 | 18 | 8 | 218 | 290 |
| 220 | 110 | 290 | 310 | 126 | 75 | 20 | 8 | 228 | 300 |
| 230 | 115 | 300 | 320 | 131 | 80 | 20 | 8 | 238 | 308 |
| 240 | 120 | 310 | 330 | 136 | 85 | 20 | 8 | 248 | 318 |
| 250 | 125 | 330 | 350 | 141 | 90 | 22 | 8 | 258 | 338 |
| 260 | 130 | 340 | 360 | 146 | 95 | 22 | 8 | 268 | 348 |
| 270 | 135 | 350 | 370 | 151 | 95 | 22 | 8 | 278 | 358 |
| 280 | 140 | 360 | 380 | 156 | 100 | 22 | 8 | 288 | 368 |
| 290 | 145 | 370 | 390 | 161 | 105 | 25 | 8 | 298 | 378 |
| 300 | 150 | 390 | 410 | 166 | 110 | 25 | 8 | 308 | 396 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

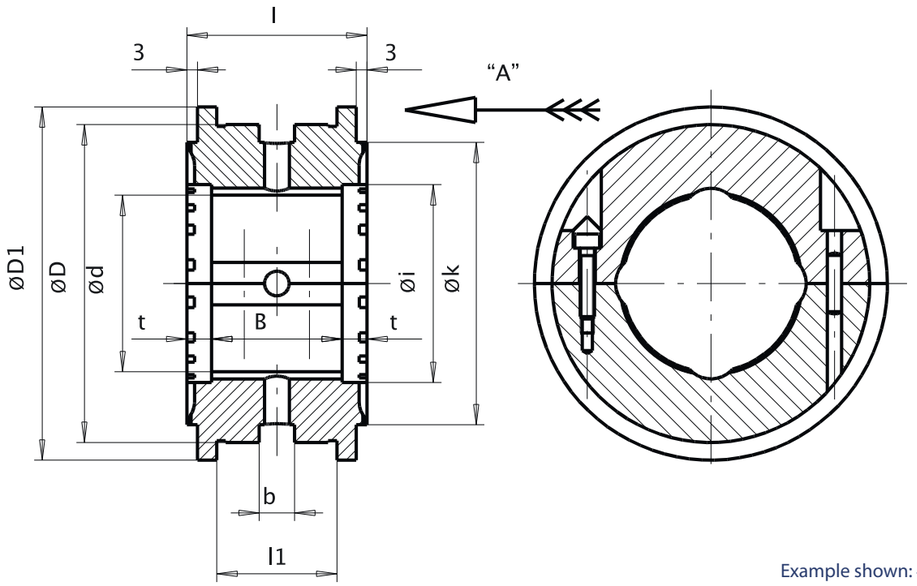
Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring

# Combined Bearing

## Journal Bearing with Double Thrust Face, Split, B/D = 0.75




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | $l1^{H7}$ | b | t | i | k |
|---|---|---|---|---|---|---|---|---|---|
| 40 | 30 | 80 | 90 | 44 | 27 | 8 | 7 | 44 | 70 |
| 45 | 34 | 85 | 95 | 48 | 31 | 10 | 7 | 49 | 75 |
| 50 | 37 | 90 | 100 | 51 | 34 | 10 | 7 | 56 | 75 |
| 55 | 41 | 95 | 105 | 55 | 38 | 12 | 7 | 61 | 85 |
| 60 | 45 | 100 | 110 | 59 | 41 | 12 | 7 | 66 | 90 |
| 65 | 49 | 105 | 115 | 63 | 44 | 12 | 7 | 71 | 95 |
| 70 | 52 | 110 | 120 | 66 | 46 | 12 | 7 | 76 | 100 |
| 75 | 56 | 120 | 130 | 70 | 48 | 12 | 7 | 81 | 110 |
| 80 | 60 | 125 | 135 | 74 | 52 | 18 | 7 | 86 | 115 |
| 85 | 64 | 130 | 140 | 78 | 55 | 18 | 7 | 91 | 120 |
| 90 | 67 | 135 | 145 | 81 | 55 | 18 | 7 | 96 | 125 |
| 95 | 71 | 140 | 150 | 85 | 57 | 21 | 7 | 101 | 130 |
| 100 | 75 | 150 | 160 | 89 | 59 | 21 | 7 | 106 | 138 |
| 110 | 82 | 160 | 175 | 96 | 64 | 21 | 7 | 116 | 148 |
| 120 | 90 | 170 | 185 | 104 | 70 | 21 | 7 | 126 | 158 |
| 130 | 97 | 180 | 195 | 111 | 75 | 21 | 7 | 136 | 168 |
| 140 | 105 | 200 | 215 | 119 | 81 | 21 | 7 | 146 | 188 |
| 150 | 112 | 210 | 225 | 126 | 86 | 25 | 7 | 156 | 198 |
| 160 | 120 | 220 | 235 | 134 | 92 | 25 | 7 | 166 | 208 |
| 170 | 127 | 240 | 255 | 141 | 97 | 25 | 7 | 176 | 228 |
| 180 | 135 | 250 | 265 | 149 | 103 | 25 | 7 | 186 | 238 |
| 190 | 142 | 260 | 275 | 156 | 108 | 25 | 7 | 196 | 248 |
| 200 | 150 | 270 | 285 | 164 | 114 | 25 | 7 | 206 | 258 |
| 210 | 157 | 280 | 300 | 173 | 120 | 25 | 8 | 218 | 290 |
| 220 | 165 | 290 | 310 | 181 | 125 | 25 | 8 | 228 | 300 |
| 230 | 172 | 300 | 320 | 188 | 130 | 25 | 8 | 238 | 308 |
| 240 | 180 | 310 | 330 | 196 | 135 | 25 | 8 | 248 | 318 |
| 250 | 187 | 330 | 350 | 203 | 150 | 30 | 8 | 258 | 338 |
| 260 | 195 | 340 | 360 | 211 | 155 | 30 | 8 | 268 | 348 |
| 270 | 202 | 350 | 370 | 218 | 155 | 30 | 8 | 278 | 358 |
| 280 | 210 | 360 | 380 | 226 | 160 | 30 | 8 | 288 | 368 |
| 290 | 217 | 370 | 390 | 233 | 170 | 35 | 8 | 298 | 378 |
| 300 | 225 | 390 | 410 | 241 | 175 | 35 | 8 | 308 | 396 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

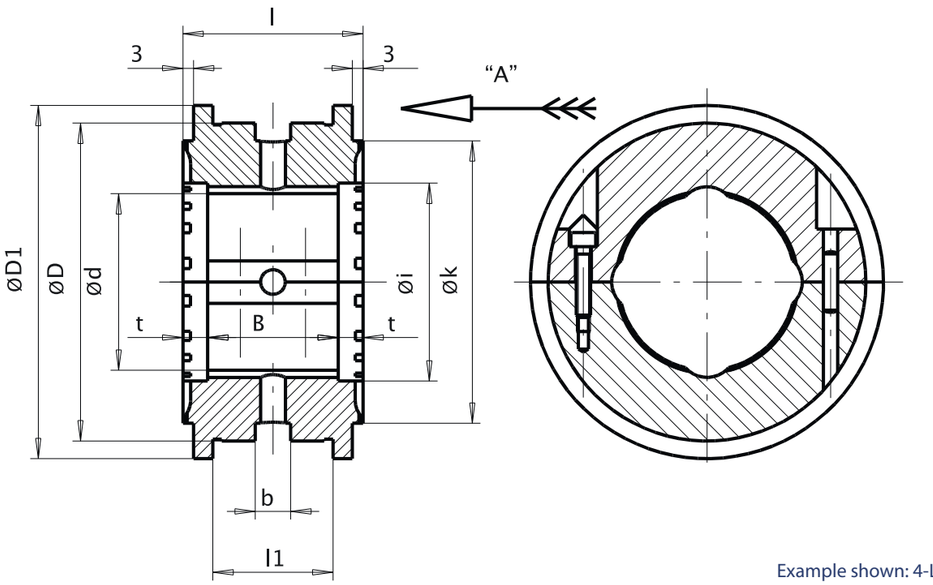
*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring



# Combined Bearing

## Journal Bearing with Double Thrust Face, Split, B/D = 1.0




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | $l1^{H7}$ | b | t | i | k |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 30 | 62 | 72 | 42 | 26 | 7 | 6 | 34 | 56 |
| 35 | 35 | 72 | 82 | 47 | 30 | 7 | 6 | 39 | 62 |
| 40 | 40 | 80 | 90 | 52 | 35 | 8 | 6 | 44 | 70 |
| 45 | 45 | 85 | 95 | 57 | 40 | 10 | 6 | 49 | 75 |
| 50 | 50 | 90 | 100 | 62 | 45 | 10 | 6 | 56 | 80 |
| 55 | 55 | 95 | 105 | 67 | 50 | 12 | 6 | 61 | 85 |
| 60 | 60 | 100 | 110 | 72 | 54 | 12 | 6 | 66 | 90 |
| 65 | 65 | 105 | 115 | 77 | 58 | 12 | 6 | 71 | 95 |
| 70 | 70 | 110 | 120 | 82 | 62 | 12 | 6 | 76 | 100 |
| 75 | 75 | 120 | 130 | 87 | 65 | 12 | 6 | 81 | 110 |
| 80 | 80 | 125 | 135 | 92 | 70 | 18 | 6 | 86 | 115 |
| 85 | 85 | 130 | 140 | 97 | 74 | 18 | 6 | 91 | 120 |
| 90 | 90 | 135 | 145 | 102 | 76 | 18 | 6 | 96 | 125 |
| 95 | 95 | 140 | 150 | 107 | 79 | 21 | 6 | 101 | 130 |
| 100 | 100 | 150 | 160 | 112 | 82 | 21 | 6 | 106 | 138 |
| 110 | 110 | 160 | 175 | 122 | 90 | 21 | 6 | 116 | 148 |
| 120 | 120 | 170 | 185 | 132 | 98 | 21 | 6 | 126 | 158 |
| 130 | 130 | 180 | 195 | 142 | 106 | 21 | 6 | 136 | 168 |
| 140 | 140 | 200 | 215 | 152 | 114 | 21 | 6 | 146 | 188 |
| 150 | 150 | 210 | 225 | 162 | 122 | 25 | 6 | 156 | 198 |
| 160 | 160 | 220 | 235 | 172 | 130 | 25 | 6 | 166 | 208 |
| 170 | 170 | 240 | 255 | 182 | 138 | 25 | 6 | 176 | 228 |
| 180 | 180 | 250 | 265 | 192 | 146 | 25 | 6 | 186 | 238 |
| 190 | 190 | 260 | 275 | 202 | 154 | 25 | 6 | 196 | 248 |
| 200 | 200 | 270 | 285 | 212 | 162 | 25 | 6 | 206 | 258 |
| 210 | 210 | 280 | 300 | 226 | 160 | 25 | 8 | 218 | 290 |
| 220 | 220 | 290 | 310 | 236 | 170 | 25 | 8 | 228 | 300 |
| 230 | 230 | 300 | 320 | 246 | 180 | 25 | 8 | 238 | 308 |
| 240 | 240 | 310 | 330 | 256 | 190 | 25 | 8 | 248 | 318 |
| 250 | 250 | 330 | 350 | 266 | 200 | 30 | 8 | 258 | 338 |
| 260 | 260 | 340 | 360 | 276 | 210 | 30 | 8 | 268 | 348 |
| 270 | 270 | 350 | 370 | 286 | 210 | 30 | 8 | 278 | 358 |
| 280 | 280 | 360 | 380 | 296 | 210 | 30 | 8 | 288 | 368 |
| 290 | 290 | 370 | 390 | 306 | 220 | 35 | 8 | 298 | 378 |
| 300 | 300 | 390 | 410 | 318 | 230 | 35 | 8 | 308 | 396 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

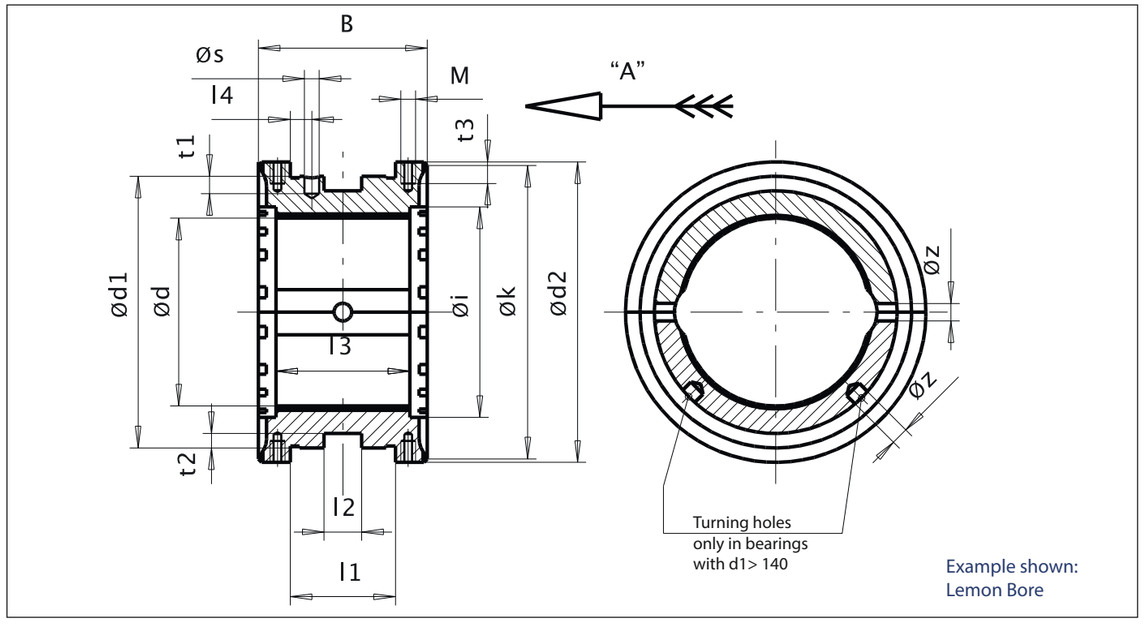
Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

*seen in direction A

Thrust part:
- open
- closed
- open, with installed throttle ring

# Combined Bearing

## Journal Bearing with Double Thrust Face, Split,
## Following DIN 7474, E-133




| $d^{H6}$ | d1 | d2 | k | i | s | M | z | $B_{f7}$ | $l1^{H7}$ | l2 | l3 | l4 | t1 | t2 | t3 | Thrust surface in mm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | 65 m6 | 70 | 69 | 56 | 4 | - | 4 | 35 | 25 | 10 | 29 | 5,0 | 3 | 3 | - | 1170 |
| 56 | 70 m6 | 75 | 73 | 63 | 4 | - | 5 | 40 | 30 | 10 | 33 | 6,0 | 4 | 3 | - | 1070 |
| 63 | 80 m6 | 85 | 83 | 70 | 4 | - | 5 | 45 | 30 | 12 | 42 | 6,0 | 4 | 3 | - | 1560 |
| 70 | 90 m6 | 95 | 93 | 78 | 5 | - | 6 | 50 | 35 | 12 | 42 | 6,0 | 4 | 3 | - | 2100 |
| 80 | 105 m6 | 112 | 110 | 88 | 5 | - | 6 | 60 | 40 | 15 | 52 | 6,5 | 5 | 4 | - | 3420 |
| 90 | 115 m6 | 123 | 121 | 99 | 6 | - | 8 | 65 | 45 | 15 | 56 | 8,0 | 5 | 4 | - | 3800 |
| 100 | 130 m6 | 138 | 136 | 110 | 7 | - | 8 | 75 | 50 | 15 | 65 | 9,0 | 6 | 4 | - | 5020 |
| 110 | 140 k6 | 150 | 148 | 121 | 7 | - | 10 | 80 | 55 | 20 | 69 | 9,0 | 6 | 5 | - | 5700 |
| 125 | 160 k6 | 170 | 167 | 137 | 9 | - | 10 | 95 | 65 | 20 | 83 | 12,0 | 8 | 5 | - | 7160 |
| 140 | 180 k6 | 190 | 187 | 152 | 9 | - | 12 | 105 | 75 | 20 | 93 | 14,0 | 8 | 5 | - | 9320 |
| 160 | 205 k6 | 215 | 212 | 174 | 11 | 8 | 12 | 120 | 85 | 25 | 106 | 15,0 | 10 | 6 | - | 11500 |
| 180 | 230 k6 | 245 | 242 | 196 | 11 | 8 | 14 | 135 | 95 | 25 | 119 | 18,0 | 10 | 6 | 15 | 15800 |
| 200 | 260 k6 | 275 | 272 | 216 | 13 | 8 | 14 | 150 | 105 | 25 | 134 | 20,0 | 15 | 6 | 15 | 21500 |
| 225 | 290 k6 | 305 | 302 | 243 | 13 | 10 | 16 | 170 | 120 | 32 | 152 | 20,0 | 15 | 8 | 20 | 25300 |
| 250 | 325 k6 | 345 | 342 | 270 | 15 | 10 | 16 | 190 | 130 | 32 | 170 | 25,0 | 18 | 8 | 20 | 34600 |
| 280 | 360 j6 | 380 | 377 | 300 | 15 | 10 | 18 | 210 | 145 | 32 | 190 | 28,0 | 20 | 8 | 20 | 40900 |
| 315 | 410 j6 | 435 | 431 | 337 | 18 | 12 | 18 | 235 | 165 | 40 | 213 | 30,0 | 20 | 10 | 23 | 56700 |
| 355 | 460 j6 | 485 | 481 | 379 | 18 | 16 | 20 | 265 | 185 | 40 | 241 | 35,0 | 20 | 10 | 30 | 68900 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

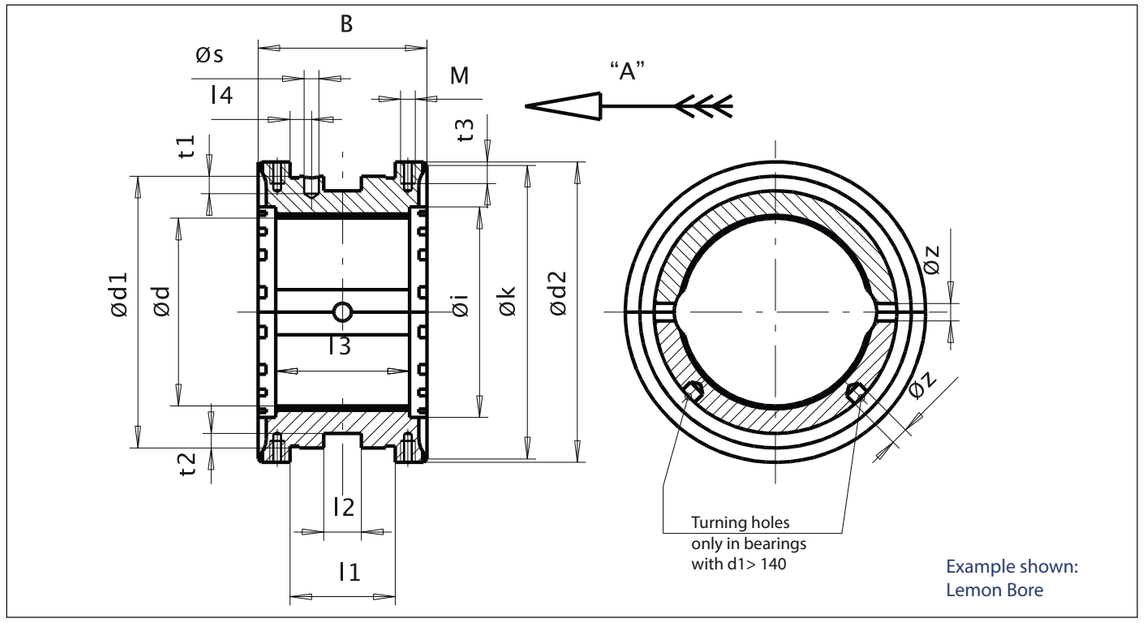
*seen in direction A

Thrust part:
- open
- closed



# Combined Bearing

## Journal Bearing with Double Thrust Face, Split
## Following DIN 7474, E-134




| $d^{H6}$ | d1 | d2 | k | i | s | M | z | $B_{f7}$ | $l1^{H7}$ | l2 | l3 | l3 | t1 | t2 | t3 | Thrust surface in mm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 40 m6 | 45 | 43 | 29 | 2 | - | 2,5 | 20 | 12 | 5 | 16 | 2,0 | 2 | 3 | - | 791 |
| 26 | 44 m6 | 49 | 47 | 32 | 2 | - | 2,5 | 22 | 14 | 6 | 18 | 2,0 | 2 | 3 | - | 930 |
| 32 | 48 m6 | 53 | 51 | 36 | 2 | - | 3,0 | 25 | 16 | 6 | 21 | 3,0 | 2 | 3 | - | 1020 |
| 36 | 52 m6 | 58 | 56 | 41 | 3 | - | 3,0 | 28 | 18 | 7 | 23 | 3,0 | 3 | 3 | - | 1140 |
| 40 | 56 m6 | 64 | 62 | 45 | 3 | - | 3,5 | 32 | 20 | 8 | 27 | 4,0 | 3 | 3 | - | 1430 |
| 45 | 60 m6 | 72 | 70 | 51 | 3 | - | 3,5 | 35 | 25 | 9 | 29 | 4,0 | 3 | 3 | - | 1810 |
| 50 | 65 m6 | 80 | 78 | 56 | 4 | - | 4,0 | 35 | 25 | 10 | 29 | 5,0 | 3 | 3 | - | 2340 |
| 56 | 70 m6 | 90 | 88 | 63 | 4 | - | 5,0 | 40 | 30 | 10 | 33 | 6,0 | 3 | 3 | - | 2960 |
| 63 | 80 m6 | 100 | 98 | 70 | 4 | - | 5,0 | 45 | 30 | 12 | 38 | 6,0 | 4 | 4 | - | 3690 |
| 70 | 90 m6 | 110 | 108 | 78 | 5 | - | 6,0 | 50 | 35 | 12 | 42 | 6,0 | 4 | 5 | - | 4380 |
| 80 | 105 m6 | 125 | 123 | 88 | 5 | - | 6,0 | 60 | 14 | 15 | 52 | 6,5 | 5 | 6 | - | 5800 |
| 90 | 115 m6 | 140 | 138 | 99 | 6 | - | 8,0 | 65 | 45 | 15 | 56 | 8,0 | 5 | 6 | - | 7260 |
| 100 | 130 m6 | 155 | 152 | 110 | 7 | - | 8,0 | 75 | 50 | 15 | 65 | 9,0 | 6 | 7 | - | 8640 |
| 110 | 140 k6 | 172 | 169 | 121 | 7 | - | 10,0 | 80 | 55 | 20 | 69 | 9,0 | 6 | 7 | - | 10900 |
| 125 | 160 k6 | 195 | 192 | 137 | 9 | - | 10,0 | 95 | 65 | 20 | 83 | 12,0 | 8 | 8 | - | 14200 |
| 140 | 180 k6 | 215 | 212 | 152 | 9 | - | 12,0 | 105 | 75 | 20 | 93 | 14,0 | 8 | 9 | - | 17200 |
| 160 | 205 k6 | 245 | 242 | 174 | 11 | 8 | 12,0 | 120 | 85 | 25 | 106 | 15,0 | 10 | 10 | 15 | 22200 |
| 180 | 230 k6 | 280 | 277 | 196 | 11 | 8 | 14,0 | 135 | 95 | 25 | 119 | 18,0 | 10 | 11 | 15 | 30100 |
| 200 | 260 k6 | 305 | 302 | 216 | 13 | 8 | 14,0 | 150 | 105 | 25 | 134 | 20,0 | 15 | 12 | 15 | 35000 |
| 225 | 290 k6 | 345 | 342 | 243 | 13 | 10 | 16,0 | 170 | 120 | 32 | 170 | 20,0 | 15 | 13 | 20 | 45500 |
| 250 | 325 k6 | 385 | 382 | 270 | 15 | 10 | 16,0 | 190 | 130 | 32 | 170 | 25,0 | 18 | 14 | 20 | 57400 |
| 280 | 360 j6 | 430 | 426 | 300 | 15 | 10 | 18,0 | 210 | 145 | 32 | 190 | 28,0 | 20 | 16 | 20 | 71800 |
| 315 | 410 j6 | 480 | 476 | 337 | 18 | 12 | 18,0 | 235 | 165 | 40 | 213 | 30,0 | 20 | 17 | 23 | 88800 |
| 355 | 460 j6 | 540 | 536 | 379 | 18 | 16 | 20,0 | 265 | 185 | 40 | 241 | 35,0 | 20 | 19 | 30 | 119000 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

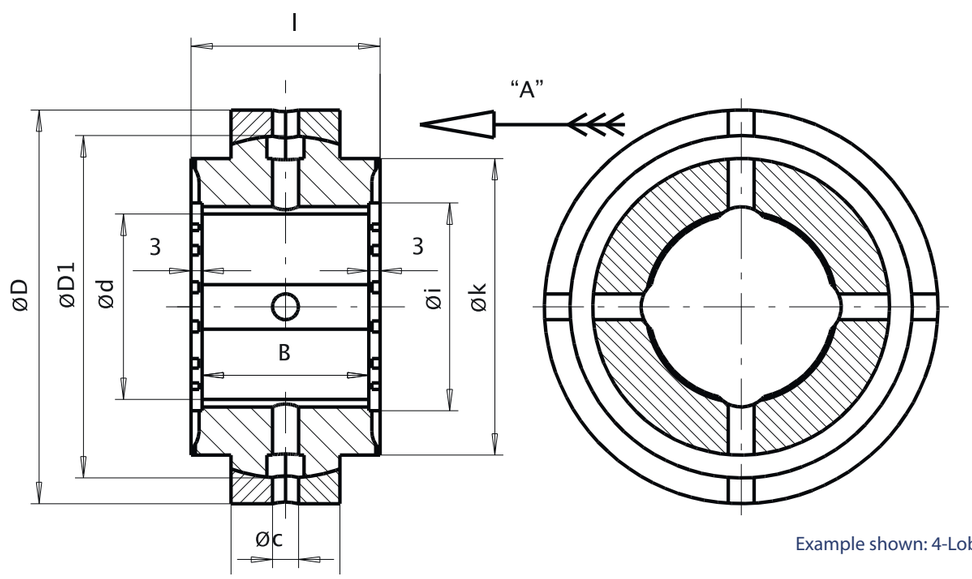
Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

*seen in direction A

Thrust part:
- open
- closed

# Combined Bearing

## Journal Bearing with Double Thrust Face with Spherical Seat, B/D = 1.0




Example shown: 4-Lobe

| $d^{H6}$ | B | $D_{j6}$ | D1 | $l_{h7}$ | l1 | c | i | k |
|---|---|---|---|---|---|---|---|---|
| 50 | 50 | 110 | 90 | 56 | 25 | 7 | 56 | 80 |
| 55 | 55 | 115 | 95 | 61 | 30 | 7 | 61 | 85 |
| 60 | 60 | 120 | 100 | 66 | 30 | 9 | 66 | 90 |
| 65 | 65 | 130 | 105 | 71 | 30 | 9 | 71 | 95 |
| 70 | 70 | 135 | 110 | 76 | 35 | 9 | 76 | 100 |
| 75 | 75 | 145 | 120 | 81 | 35 | 9 | 81 | 110 |
| 80 | 80 | 150 | 125 | 86 | 40 | 10 | 86 | 115 |
| 85 | 85 | 160 | 130 | 91 | 40 | 10 | 91 | 120 |
| 90 | 90 | 170 | 135 | 96 | 45 | 10 | 96 | 125 |
| 95 | 95 | 175 | 140 | 101 | 45 | 10 | 101 | 130 |
| 100 | 100 | 185 | 150 | 106 | 50 | 12 | 106 | 138 |
| 110 | 110 | 195 | 160 | 116 | 55 | 12 | 116 | 148 |
| 120 | 120 | 210 | 170 | 126 | 60 | 12 | 126 | 158 |
| 130 | 130 | 220 | 190 | 136 | 65 | 12 | 136 | 168 |
| 140 | 140 | 240 | 200 | 146 | 70 | 14 | 146 | 188 |
| 150 | 150 | 260 | 210 | 156 | 75 | 14 | 156 | 198 |

Bore types:
- 4-Lobe
- 3-Lobe
- lemon bore
- cylindrical
- offset halves

Direction of Rotation:*
- clockwise
- counterclockwise
- bidirectional

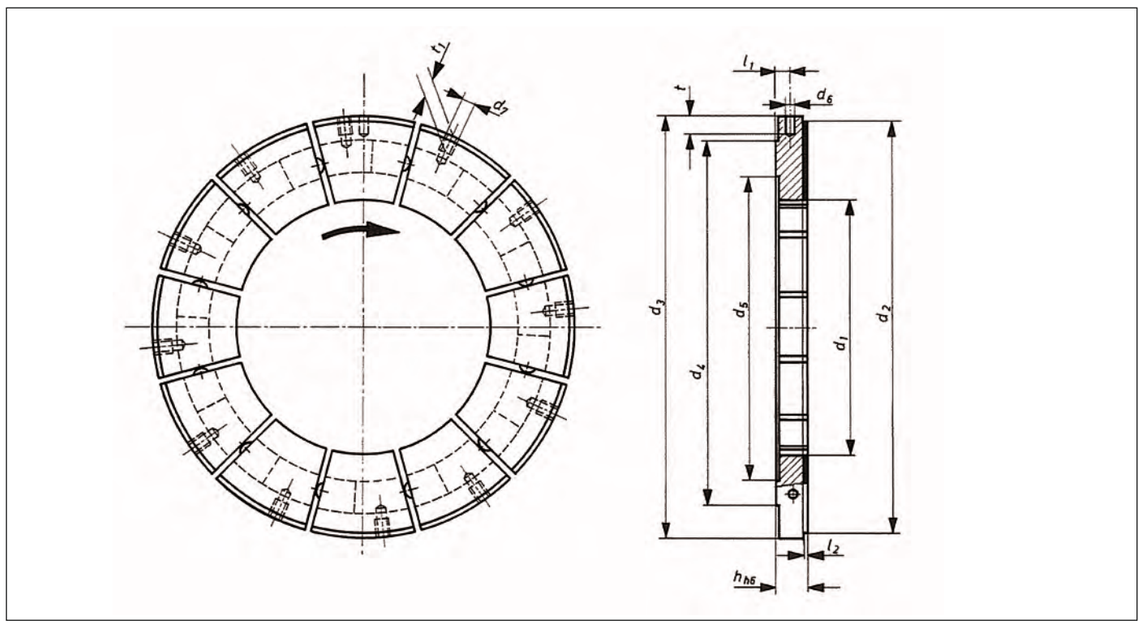
*seen in direction A

Thrust part:
- open
- closed



# Thrust Bearing

## Thrust Pads, E-970




| d1 | d2 | d3 | d4 | d5 | d6 | h | l1 | l2 | t | Area $mm^2$ | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 130 | 215 | 225 | 195 | 155 | 8 | 18 | 9 | 3 | 12 | 21800 | 3,55 |
| 140 | 230 | 240 | 205 | 165 | 8 | 20 | 10 | 3 | 12 | 24800 | 4,45 |
| 160 | 250 | 260 | 230 | 180 | 8 | 22 | 10 | 3 | 12 | 27600 | 5,41 |
| 180 | 290 | 300 | 270 | 200 | 10 | 25 | 12 | 3 | 16 | 37600 | 8,43 |
| 205 | 330 | 340 | 310 | 230 | 10 | 28 | 14 | 3 | 16 | 49100 | 12,1 |
| 230 | 370 | 380 | 350 | 260 | 10 | 30 | 15 | 3 | 14 | 62200 | 16,1 |
| 260 | 420 | 430 | 390 | 300 | 10 | 32 | 16 | 3 | 14 | 81100 | 22 |
| 290 | 470 | 480 | 430 | 340 | 13 | 35 | 17 | 3 | 20 | 103000 | 30 |
| 325 | 525 | 535 | 475 | 385 | 13 | 40 | 20 | 3 | 20 | 128000 | 42,3 |
| 345 | 560 | 570 | 505 | 410 | 13 | 45 | 22 | 3 | 20 | 147000 | 55 |
| 360 | 590 | 600 | 630 | 430 | 13 | 45 | 22 | 3 | 20 | 165000 | 60,7 |
| 390 | 630 | 640 | 570 | 460 | 16 | 50 | 25 | 3 | 24 | 186000 | 76,7 |
| 410 | 660 | 670 | 595 | 485 | 16 | 50 | 25 | 3 | 24 | 203000 | 82,2 |
| 435 | 700 | 715 | 630 | 515 | 16 | 55 | 25 | 3 | 24 | 227000 | 105 |
| 460 | 740 | 755 | 670 | 550 | 16 | 55 | 27 | 3 | 24 | 254000 | 115 |
| 485 | 790 | 805 | 715 | 585 | 20 | 60 | 30 | 3,5 | 32 | 294000 | 146 |
| 515 | 840 | 855 | 750 | 610 | 20 | 60 | 30 | 3,5 | 32 | 334000 | 164 |
| 550 | 890 | 905 | 8000 | 650 | 25 | 65 | 32 | 4 | 40 | 372000 | 198 |
| 580 | 940 | 955 | 840 | 690 | 25 | 65 | 32 | 4 | 40 | 417000 | 219 |
| 610 | 1000 | 1015 | 890 | 730 | 25 | 75 | 37 | 4 | 40 | 479000 | 294 |
| 645 | 1050 | 1065 | 950 | 780 | 25 | 75 | 38 | 4 | 40 | 525000 | 323 |
| 685 | 1120 | 1135 | 995 | 825 | 25 | 85 | 42 | 4 | 40 | 601000 | 415 |
| 720 | 1170 | 1185 | 1045 | 865 | 25 | 85 | 42 | 4 | 40 | 652000 | 450 |
| 770 | 1260 | 1275 | 1120 | 930 | 25 | 95 | 47 | 4 | 40 | 764000 | 575 |

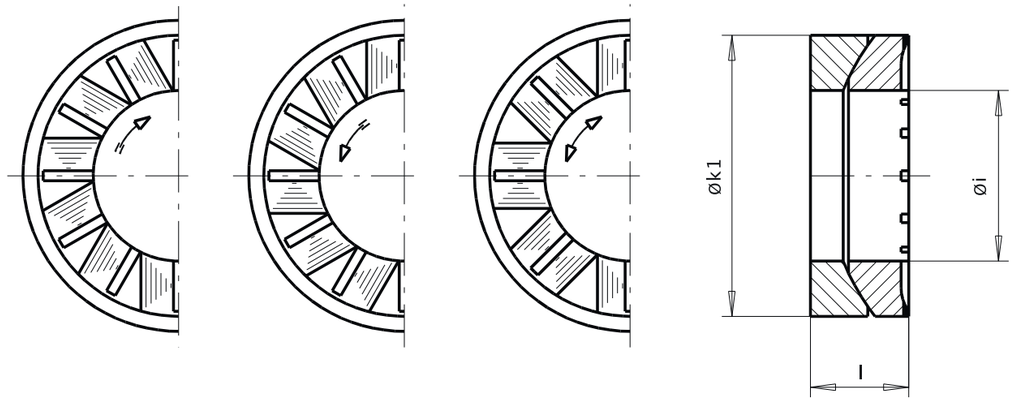
Direction of Rotation:
- clockwise
- counterclockwise
- bidirectional

# Thrust Bearing

## Taper Land with Spherical Seat

Direction of shaft rotation, as seen from the direction of thrust

C = Right K = Left A = Both sides




| i | $k1_{h6}$ | l |
|---|---|---|
| 60 | 100 | 25 |
| 62 | 110 | 25 |
| 68 | 120 | 30 |
| 78 | 130 | 30 |
| 88 | 140 | 30 |
| 94 | 150 | 30 |
| 104 | 160 | 35 |
| 110 | 170 | 35 |
| 116 | 180 | 35 |
| 126 | 190 | 35 |
| 132 | 200 | 40 |
| 138 | 210 | 40 |
| 153 | 225 | 40 |
| 166 | 240 | 40 |
| 184 | 260 | 45 |
| 200 | 280 | 45 |
| 216 | 300 | 50 |
| 236 | 320 | 50 |
| 252 | 340 | 50 |
| 264 | 360 | 55 |
| 284 | 380 | 55 |
| 300 | 400 | 55 |

Direction of Rotation:
- clockwise
- counterclockwise
- bidirectional

Lubrication Groove Form:
- open
- closed

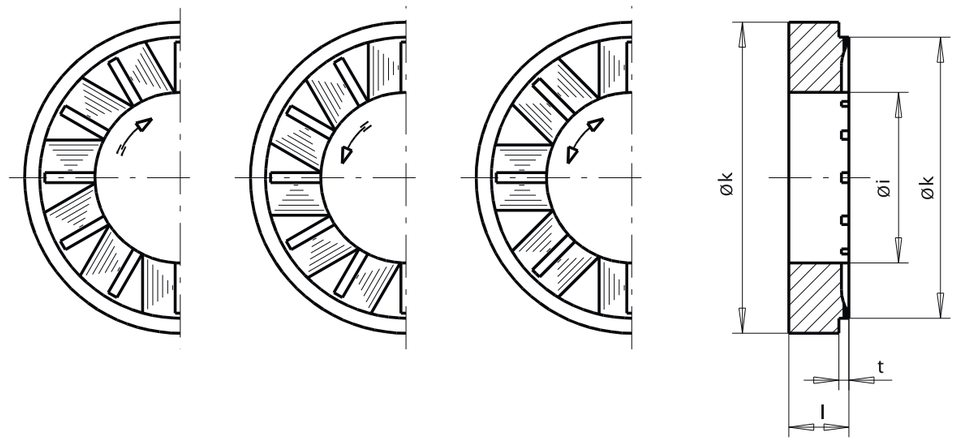


# Thrust Bearing

## Taper Land

Direction of shaft rotation, as seen from the direction of thrust

R = Right L = Left B = Both sides



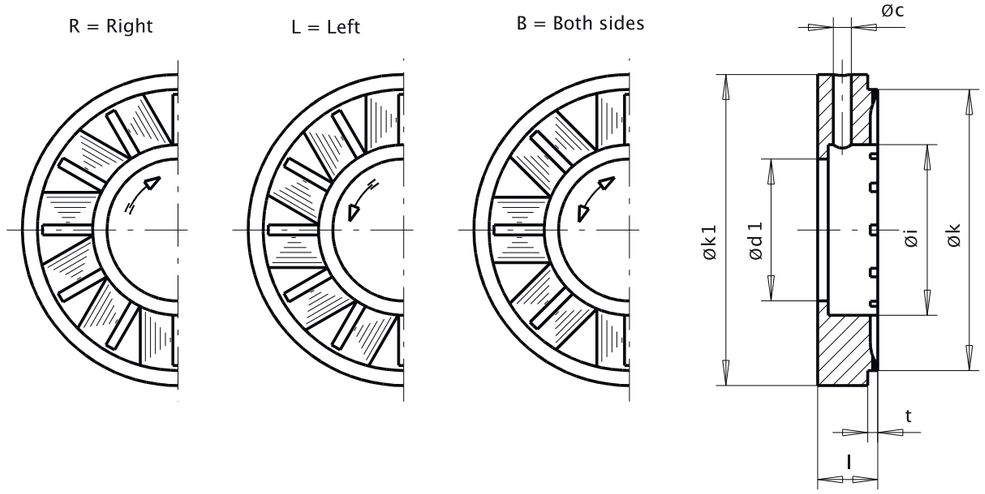

| i | k | $k1_{h6}$ | $l_{h7}$ | t |
|---|---|---|---|---|
| 24 | 41 | 47 | 12 | 1 |
| 29 | 46 | 52 | 12 | 1 |
| 34 | 56 | 62 | 12 | 1 |
| 39 | 62 | 72 | 12 | 1 |
| 44 | 70 | 80 | 14 | 1 |
| 49 | 75 | 85 | 14 | 1 |
| 56 | 80 | 90 | 14 | 2 |
| 61 | 85 | 95 | 17 | 2 |
| 66 | 90 | 100 | 17 | 2 |
| 71 | 95 | 105 | 17 | 2 |
| 76 | 100 | 110 | 17 | 2 |
| 81 | 110 | 120 | 17 | 2 |
| 86 | 115 | 125 | 17 | 2 |
| 91 | 120 | 130 | 17 | 2 |
| 96 | 125 | 135 | 20 | 2 |
| 101 | 130 | 140 | 20 | 2 |
| 106 | 138 | 150 | 20 | 2 |
| 116 | 148 | 160 | 20 | 2 |
| 126 | 158 | 170 | 20 | 3 |
| 136 | 168 | 180 | 20 | 3 |
| 146 | 188 | 200 | 20 | 3 |
| 156 | 198 | 210 | 22 | 3 |
| 166 | 208 | 220 | 22 | 3 |
| 176 | 228 | 240 | 22 | 3 |
| 186 | 238 | 250 | 22 | 3 |
| 196 | 248 | 260 | 22 | 3 |
| 206 | 258 | 270 | 22 | 3 |

Direction of Rotation:
- clockwise
- counterclockwise
- bidirectional

Lubrication Groove Form:
- open
- closed

# Thrust Bearing

## Taper Land with Throttle Edge




| d1$^{E7}$ | i | k | k1$_{h6}$ | l$_{h7}$ | t | c |
|---|---|---|---|---|---|---|
| 20 | 24 | 41 | 47 | 12 | 1 | 4 |
| 25 | 29 | 46 | 52 | 12 | 1 | 4 |
| 30 | 34 | 56 | 62 | 12 | 1 | 4 |
| 35 | 39 | 62 | 72 | 12 | 1 | 5 |
| 40 | 44 | 70 | 80 | 14 | 1 | 5 |
| 45 | 49 | 75 | 85 | 14 | 1 | 5 |
| 50 | 56 | 80 | 90 | 14 | 2 | 6 |
| 55 | 61 | 85 | 95 | 17 | 2 | 6 |
| 60 | 66 | 90 | 100 | 17 | 2 | 6 |
| 65 | 71 | 95 | 105 | 17 | 2 | 6 |
| 70 | 76 | 100 | 110 | 17 | 2 | 6 |
| 75 | 81 | 110 | 120 | 17 | 2 | 6 |
| 80 | 86 | 115 | 125 | 17 | 2 | 7 |
| 85 | 91 | 120 | 130 | 17 | 2 | 7 |
| 90 | 96 | 125 | 135 | 20 | 2 | 7 |
| 95 | 101 | 130 | 140 | 20 | 2 | 7 |
| 100 | 106 | 138 | 150 | 20 | 2 | 7 |
| 110 | 116 | 148 | 160 | 20 | 2 | 7 |
| 120 | 126 | 158 | 170 | 20 | 3 | 8 |
| 130 | 136 | 168 | 180 | 20 | 3 | 8 |
| 140 | 146 | 188 | 200 | 20 | 3 | 8 |
| 150 | 156 | 198 | 210 | 22 | 3 | 9 |
| 160 | 166 | 208 | 220 | 22 | 3 | 9 |
| 170 | 176 | 228 | 240 | 22 | 3 | 9 |
| 180 | 186 | 238 | 250 | 22 | 3 | 10 |
| 190 | 196 | 248 | 260 | 22 | 3 | 10 |
| 200 | 206 | 258 | 270 | 22 | 3 | 10 |

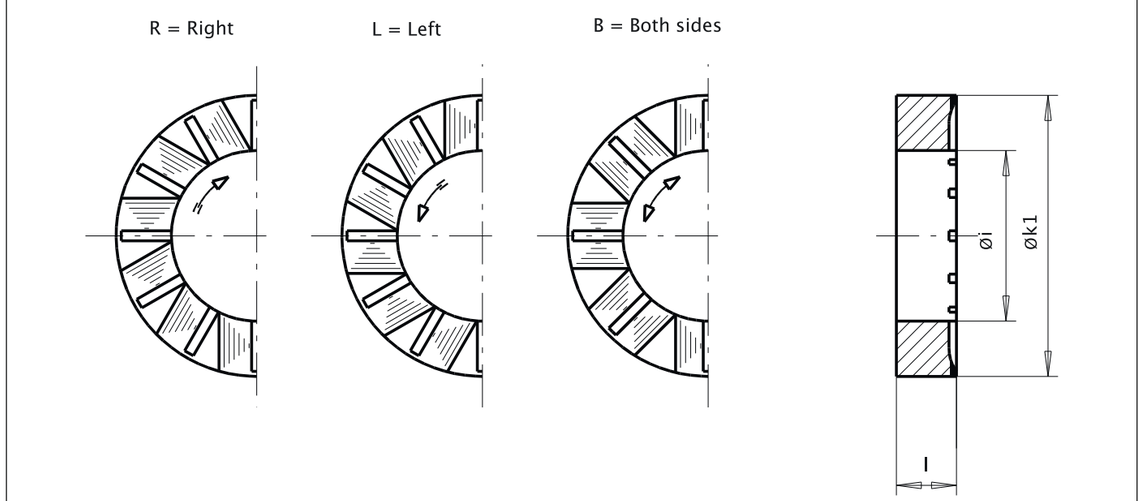
Direction of Rotation:
- clockwise
- counterclockwise
- bidirectional

Lubrication Groove Form:
- open
- closed



# Thrust Bearing

## Taper Land, Heavy-duty Construction, Unsplit



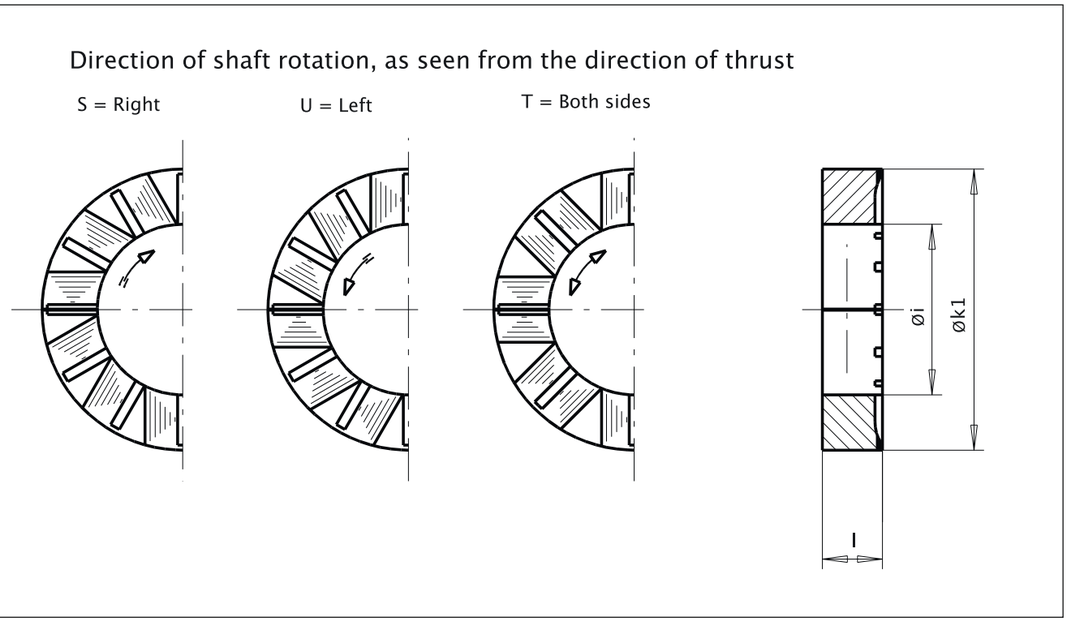

| i | k1$_{h6}$ | l$_{h7}$ |
|---|---|---|
| 60 | 100 | 22 |
| 62 | 110 | 22 |
| 68 | 120 | 22 |
| 78 | 130 | 25 |
| 88 | 140 | 25 |
| 94 | 150 | 25 |
| 104 | 160 | 30 |
| 110 | 170 | 30 |
| 116 | 180 | 30 |
| 126 | 190 | 30 |
| 132 | 200 | 35 |
| 138 | 210 | 35 |
| 153 | 225 | 35 |
| 166 | 240 | 35 |
| 184 | 260 | 35 |
| 200 | 280 | 40 |
| 216 | 300 | 40 |
| 236 | 320 | 40 |
| 252 | 340 | 40 |
| 264 | 360 | 40 |
| 284 | 380 | 40 |
| 300 | 400 | 40 |

Direction of Rotation:
- clockwise
- counterclockwise
- bidirectional

Lubrication Groove Form:
- open
- closed

# Thrust Bearing

## Taper Land, Heavy-duty Construction, Split

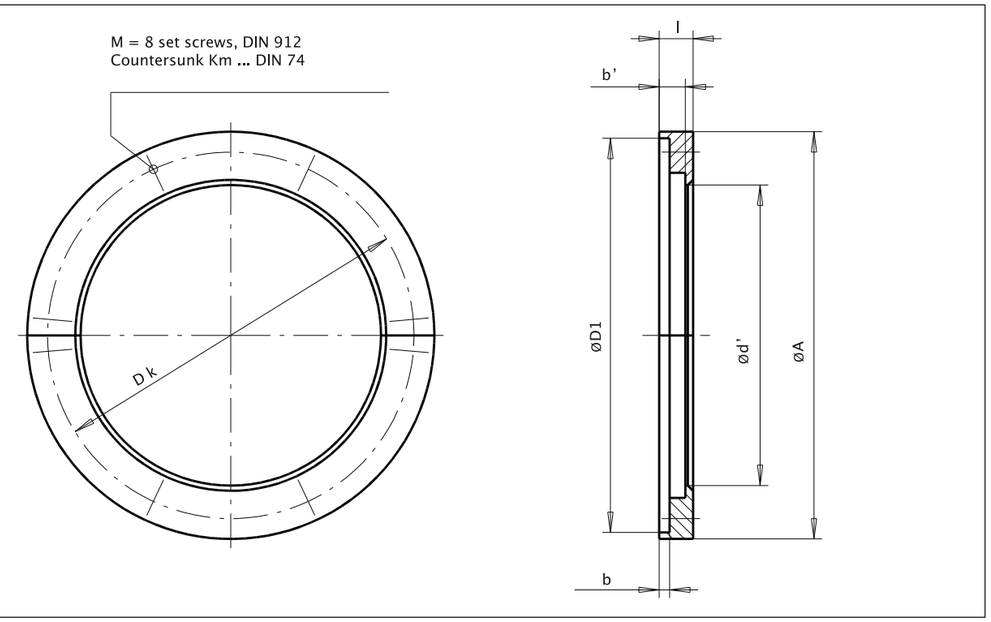



| i | $k1_{h6}$ | $l_{h7}$ |
|---|---|---|
| 60 | 100 | 22 |
| 62 | 110 | 22 |
| 68 | 120 | 22 |
| 78 | 130 | 25 |
| 88 | 140 | 25 |
| 94 | 150 | 25 |
| 104 | 160 | 30 |
| 110 | 170 | 30 |
| 116 | 180 | 30 |
| 126 | 190 | 30 |
| 132 | 200 | 35 |
| 138 | 210 | 35 |
| 153 | 225 | 35 |
| 166 | 240 | 35 |
| 184 | 260 | 35 |
| 200 | 280 | 40 |
| 216 | 300 | 40 |
| 236 | 320 | 40 |
| 252 | 340 | 40 |
| 264 | 360 | 40 |
| 284 | 380 | 40 |
| 300 | 400 | 40 |

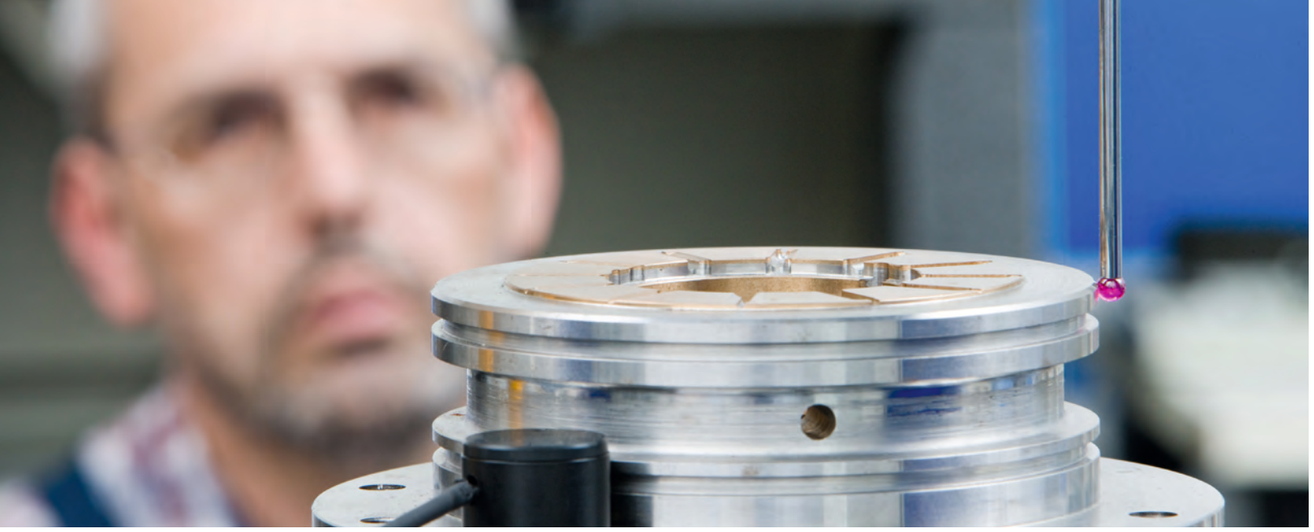
Direction of Rotation:
- clockwise
- counterclockwise
- bidirectional

Lubrication Groove Form:
- open
- closed

# Throttle Ring




| $d'^{H6}$ | A | $D1^{H7}$ | b | b´ | l | Dk | M |
|---|---|---|---|---|---|---|---|
| 56,3 | 78 | 72 | 3 | 9 | 12 | 70 | M 3 x 8 |
| 62,3 | 87 | 82 | 3 | 9 | 12 | 77 | M 3 x 8 |
| 70,3 | 95 | 90 | 3 | 9 | 13 | 84 | M 3 x 8 |
| 75,3 | 100 | 95 | 3 | 9 | 13 | 89 | M 3 x 10 |
| 80,3 | 105 | 100 | 3 | 9 | 13 | 94 | M 3 x 10 |
| 85,3 | 110 | 105 | 3 | 9 | 13 | 100 | M 3 x 10 |
| 90,3 | 115 | 110 | 4 | 9 | 13 | 105 | M 3 x 10 |
| 95,3 | 120 | 115 | 4 | 9 | 13 | 110 | M 3 x 10 |
| 100,3 | 125 | 120 | 4 | 9 | 13 | 114 | M 3 x 10 |
| 110,3 | 135 | 130 | 4 | 10 | 13 | 125 | M 3 x 12 |
| 115,3 | 140 | 135 | 4 | 10 | 13 | 130 | M 3 x 12 |
| 120,3 | 145 | 140 | 4 | 10 | 13 | 134 | M 3 x 12 |
| 125,3 | 150 | 145 | 4 | 10 | 13 | 140 | M 3 x 12 |
| 130,3 | 155 | 150 | 4 | 10 | 13 | 145 | M 3 x 12 |
| 138,3 | 165 | 160 | 4 | 10 | 13 | 152 | M 3 x 12 |
| 148,3 | 180 | 175 | 4 | 10 | 13 | 168 | M 3 x 12 |
| 158,3 | 190 | 185 | 4 | 10 | 13 | 178 | M 3 x 12 |
| 168,3 | 200 | 195 | 4 | 10 | 13 | 188 | M 3 x 12 |
| 188,3 | 220 | 215 | 4 | 10 | 13 | 208 | M 4 x 12 |
| 198,3 | 232 | 225 | 4 | 11 | 14 | 216 | M 4 x 12 |
| 208,3 | 240 | 235 | 4 | 11 | 14 | 228 | M 4 x 12 |



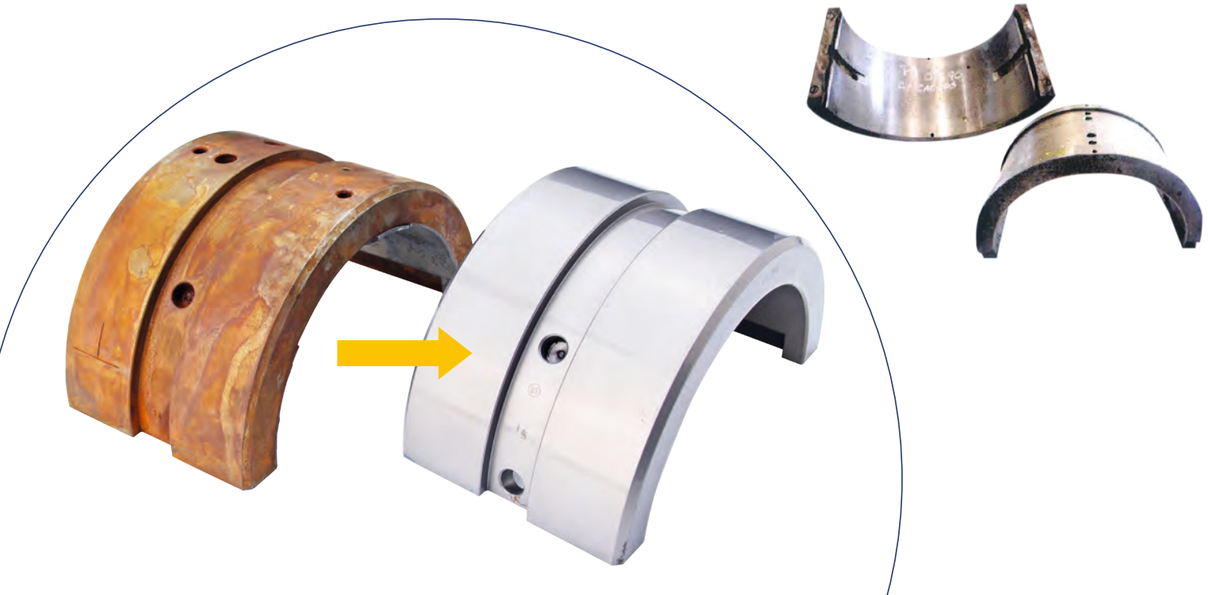
# Bearing Repair, Service and Upgrade

Damage to bearings generally results in machine failure and thus in costly downtimes. This is why Miba has expanded the area of bearing repair, in addition to the specialization in the development and manufacturing of new bearings. We help customers to increase efficiency and lower costs by upgrading or reengineering old bearings.

Starting with an evaluation of the existing bearing, we can recommend the best solution and realize the repair of your bearing. Please contact us for information and consultation.

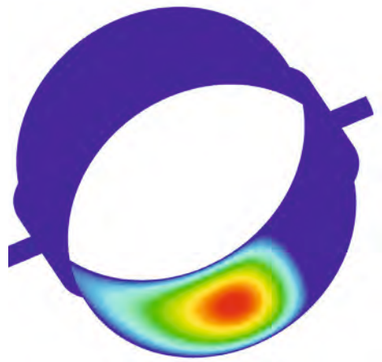
Our services:

- Bearing failure analysis
- Bearing design optimization
- Bearing repair
- Reverse engineering
- Training

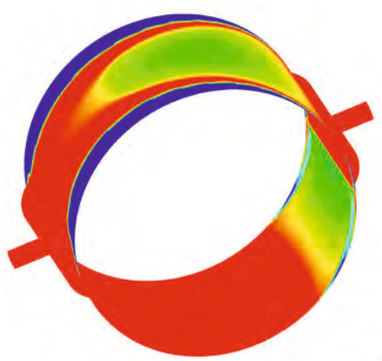


# Simulation & Analysis

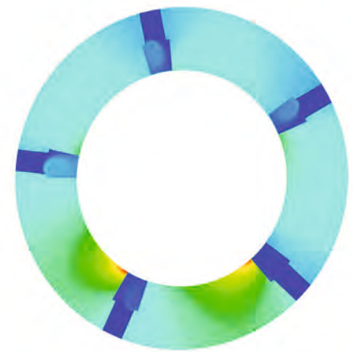
With available professional software we are able to simulate the bearing operation and visualize the flow, deformation or stress behavior. Therefore, we can analyze and further develop our product design. These tools are an indispensable addition to our test stands to guarantee you the best technical solution.



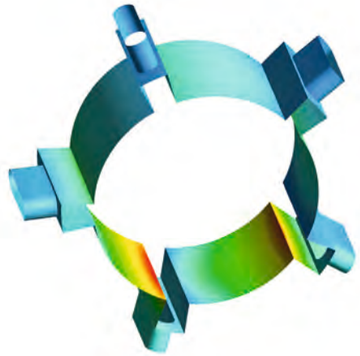
Journal Bearing Pressure



Journal Bearing Oil Air Fraction



Tilting Pad Temperature



Tilting Pad Temperature

***www.miba.com***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